

A COMPARISON OF SIMILAR SCALES ON THE STRONG VOCATIONAL  
INTEREST BLANK AND THE KUDER OCCUPATIONAL  
INTEREST SURVEY, FORM DD

by

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## CHAPTER I

### THE PROBLEM AND DEFINITIONS OF TERMS USED

Whenever two tests purport to measure the same factors, it is both natural and desirable to compare them empirically to determine to what extent they actually measure these same factors. By using methods of concrete experimental comparison, more realistic decisions regarding both the use of these tests and their relative effectiveness can be made.

#### I. THE PROBLEM

General background. Traditionally, there have been two giants in the field of occupational interest testing: The Strong Vocational Interest Blank and The Kuder Preference Record - Vocational. Originally, these two occupational interest tests used completely different methods. The Strong provided an index of the similarity between a person's interests and those of successful men in each of a wide variety of occupations. Strong accomplished this comparison by using a criterion group (usually about 300) in each specified occupation. He actually administered the tests to the criterion groups and then compared each individual student's profile with the criterion group in each occupation. Thus, the Strong gave the student a score in each of many occupations, showing how similar his interests were to the interests of men who

had been successfully engaged in that occupation. These scores were weighed according to the interests of a group (men in general) on each scale. Strong has continued to use this method of scoring since the original publication of his tests. The only changes made in the Strong have been to update and improve his criterion groups.<sup>1</sup>

The Kuder Preference Record - Vocational was scored by an entirely different method. The Kuder was unlike the Strong in that it did not compare an individual's interest pattern with those of successful men currently engaged in specific occupations. The Kuder measured preference in ten broad areas of interest. An individual's preferences indicated that he liked certain types of activities. When his preferences were identified, he could investigate the occupations that involved those activities. In this way he narrowed the field of investigation to those occupations most deserving of his attention. Kuder also has continued to use his method of scoring (since the original publication) on his test, The Kuder Preference Record - Vocational.<sup>2</sup>

In 1956, Kuder published a new form of the Kuder Preference Record - Occupational, Form D. The form used the

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<sup>1</sup>Edward K. Strong, The Strong Vocational Interest Blank Manual (Stanford: The Stanford University Press, 1966).

<sup>2</sup>G. Frederic Kuder, Administrator's Manual, Kuder Preference Record - Vocational, Form C (Chicago, Illinois: Science Research Associates, Inc., 1960).

same items as the old Kuder, but was scored in a new way, very much like the Strong was scored. It gave the student a score in each of forty-eight specific occupations, showing how much his interests were similar to the interests of men successfully engaged in those occupations.<sup>3</sup> Two studies have been made comparing the new Kuder Preference Record - Occupational, Form D, with the Strong Vocational Interest Blank.<sup>4</sup> In both of the studies cited, several scales were found to be named the same, but each pair had a very low relationship.

Again, in 1966, Kuder published another test using an entirely different scoring method, the Occupational Interest Survey, Form DD (OIS). Kuder stated that the new concept in scoring resulted in better discrimination between occupational groups than had been demonstrated by other approaches. The traditional approach had been to compare the interests of the members of a specific occupational group with those of a general reference group, and to weigh the items accordingly. The general reference group was used by both Strong and Kuder

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<sup>3</sup>G. Frederic Kuder, Kuder Preference Record - Occupational, Form D, Manual (Chicago, Illinois: Science Research Associates, Inc., 1956).

<sup>4</sup>Paul King, Gwendolyn Norrell, and G. Pat Powers, "Relationships Between Twin Scales on the SVIB and the Kuder," Journal of Counseling Psychology, 10:395-401, Winter, 1965; Michael P. Joseph, "The Strong Vocational Interest Blank and the Kuder Preference Record - Occupational, Form D: A Comparative Study of Eight Same-Named Scales," Yearbook of the National Council of Measurement in Education, 18:143-54, 1961.

in developing norms for the Strong Vocational Interest Blank and the Kuder Preference Record - Occupational, Form D.

In the OIS, better differentiation is achieved by eliminating the use of a general reference group representative of men in general. It can now be said with considerably more confidence that a person's pattern of interests is, for example, more like that typical of chemists than of pediatricians.<sup>5</sup>

No studies had been made comparing this new Kuder Occupational Interest Survey, Form DD with the Strong Vocational Interest Blank, prior to this study.

A major difference exists between the items of the Strong Vocational Interest Blank and the Kuder Occupational Interest Survey, Form DD. The Strong consists of 400 items to which the student responds like, dislike, or indifferent. The Kuder consists of 100 items and each item contains three choices. The student marks the one most like him, the one least like him, and leaves the other choice blank. In the Kuder, the student is forced to choose between various possibilities.

The statement of the problem. The purpose of the study was to compare similar scales on the Strong Vocational Interest Blank and the Kuder Occupational Interest Survey, Form DD, to determine to what extent they actually measure the same factors.

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<sup>5</sup>G. Frederic Kuder, Kuder Occupational Interest Survey, Form DD, General Manual (Chicago, Illinois: Science Research Associates, Inc., 1966).

The information resulting from the comparison would be useful to counselors in deciding which interest test to use in the counseling situation. The results would also point out inconsistencies and contradictions in the use of both interest tests with the same client.

## II. THE DEFINITION OF THE PROBLEM

Definition of terms used. The following list of terms was defined for clarification of the problem.

1. Vocational Interest - As used in this study, vocational interest refers to a score for one specific occupation on either the Strong Vocational Interest Blank or the Kuder Occupational Interest Survey, Form DD.

2. Comparison - This term refers to the degree of correlation between two sets of data as measured by the Pearson's Product Moment Correlation Coefficient.

3. Correlation Coefficient ( $r$ ) - "A measure of the degree of relationship, or 'going-togetherness,' between two sets of measures for the same group of individuals."<sup>6</sup> A correlation coefficient can have a value ranging from +1 for perfect positive correlation or relationship to a -1 for perfect negative correlation or relationship, with a value of 0 for a complete lack of relationship.

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<sup>6</sup>Roger T. Lennon, "A Glossary of 100 Measurement Terms," Test Service Notebook, No. 13, p. 2.



4. Significance - A statistical measure, such as the correlation coefficient, is said to be significant if (within certain limits of probability) it could not have occurred merely by chance. Thus, if we say that the correlation coefficient of .89 is significant at the .01 level, we mean that only once in a hundred times would we expect to get .89 for a correlation coefficient between the two variables merely by chance. This expression is written mathematically  $r = .89 (p .01)$ .

All that a significant result implies is that one has observed something relatively more likely given some alternative situation. Statistical significance is a statement about conditional probability, nothing else. It does not guarantee that something important, or even meaningful, has been found.<sup>7</sup>

Meaningfulness is shown by the magnitude of the correlation coefficient.

5. Simple Random Sample - A random sample is a sample so drawn that every single sampling unit in the population has an equal chance of being drawn into the sample. In using the technique of simple random sampling, each individual in the population is assigned a number and these numbers are drawn randomly for the sample by chance, as with a table of random units.<sup>8</sup>

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<sup>7</sup>William L. Hays, Statistics For Psychologists (New York, New York: Holt, Rinehard and Winston, 1963), p. 299.

<sup>8</sup>Fred P. Barnes, Research For The Practitioner In Education (Washington, D.C., Maryland: Department of

6. Computer - The computer system used to analyze the data was the IBM 1410 computer system, Kansas State University. The program was written in Fortran.

Limitations of the research. The limitations of the research are as follows:

1. A simple random sample of all freshman males at Kansas State University, Manhattan, Kansas was used. The results of the study statistically apply only to Kansas State University freshman males since only these students had the possibility of being included in the sample. Nevertheless, the results should apply very accurately to other colleges similar to Kansas State University in student occupational interests. Also, the results should be useful to all persons utilizing the two interest inventories in a counseling situation.

2. Kansas State University is fully accredited by the North Central Association of Colleges and Secondary Schools and numerous professional organizations. The university was established early in 1863 under provisions of the Morrill Act. K-State is proud of its heritage as a land-grant university. The university has changed with the economy of Kansas. Launched primarily as an agricultural



school, it has evolved into an important engineering and scientific institution. Course requirements have been broadened to supplement specialized vocational training with more liberal education. The university has developed over fifty departments integrated under colleges of Agriculture, Architecture and Design, Arts and Sciences, Commerce, Education, Engineering, Home Economics, and Veterinary Medicine. K-State has received wide recognition for its excellent programs in Engineering and Veterinary Medicine. The enrollment at K-State was approximately 11,000 in 1966-67, with about 1,400 of these students being freshman males. The students came from all parts of the United States and many foreign countries. The largest percentage of students came from Kansas, many of them from small Kansas towns. Kansas State University is located in Manhattan, a second-class city in northeastern Kansas. Manhattan has a population of approximately 23,000.<sup>9</sup>

The assumptions inherent in the study. The assumptions inherent in the research study were as follows:

1. One of the assumptions necessary in using Pearson's Product Moment Correlation Coefficient is that the data must

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<sup>9</sup>Kansas State University, Kansas State University Bulletin (Manhattan, Kansas: Kansas State University, October, 1966), pp. 3-9.

be normally distributed through the population. Thus, the assumption was made that within each occupation the responses on both the Strong Vocational Interest Blank and the Kuder Occupational Interest Survey were normally distributed throughout the freshman males at Kansas State University. This assumption will have no effect on using the correlation coefficient as an index of the extent to which the two measurements are linearly related. For the purpose of making statistical inferences, the use of Fisher's transformation made normal tables and theory applicable.<sup>10</sup>

2. It is the duty of test makers to clearly delimit the factors which their tests measure. When two tests purport to measure the same factors but do not, only confusion, inconsistency, and contradiction can result from their use.

### III. THE EVALUATION OF THE STUDY

The need and value of the study. A number of studies have been made attempting to show the relationship between scores on the Kuder Preference Record - Vocational and the Strong Vocational Interest Blank. But, as has been previously mentioned, the two tests have completely different methods of scoring, and completely different objectives in testing

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<sup>10</sup>H. C. Fryer, Concepts and Methods of Experimental Statistics (Boston, Massachusetts: Allyn and Bacon, Inc., 1966, pp. 225-227.

interests.<sup>11</sup> Strong compared a student's interests with those of men within specific occupations, while Kuder measured preference in ten broad areas of interests (Kuder Preference Record - Vocational). Studies comparing the Strong Vocational Interest Blank with the Kuder Preference Record - Vocational, although of interest and use in determining counseling applications of the two tests, really are not valid because of differences in their objectives.

Two studies have been made comparing the Strong Vocational Interest Blank with the Kuder Preference Record - Occupational, Form D. The comparisons were appropriate because the Kuder Preference Record - Occupational, Form D, and the Strong Vocational Interest Blank both used the same method of scoring and had the same objectives (comparing an individual's interests with those of men within specific occupations).<sup>12</sup> One of these studies compared the two tests in only nine occupations and the other, although an extensive and interesting study, did not make use of random sampling, thus precluding any statistical inferences to a larger population.

There were several reasons for the need of this study:  
(1) No studies had previously been found comparing the Strong

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<sup>11</sup>Supra, Chapter I, pp. 1-2.

<sup>12</sup>King, Norrell, Powers, and Joseph, loc. cit.

Vocational Interest Blank with the Kuder Occupational Interest Survey, Form DD, (2) Kuder claimed a better discrimination between occupational groups using the new scoring approach, (3) The previous studies which compared the Strong Vocational Interest Blank with the Kuder Preference Record - Occupational, Form D, reported low correlations, and (4) The possibility existed of inconsistencies, contradictions, and confusion as to the use of the two instruments. The comparison was appropriate because the two tests used similar methods of scoring and had the same objectives (comparing an individual's interests to those of men within specific occupations). The study was made in rigorous adherence to the principles of research methods so that the results might be both valid and useful in making inferences to larger groups than the sample.

The objectives of the study. There were two main objectives in making this study:

1. The first objective was to point out the extent to which the two interest tests measure the same factors so that they may be more effectively used in counseling situations.
2. The second objective was to point out any inconsistencies or contradictions in the use of both interest tests with the same client. While waiting for such inconsistencies to be rectified within the tests, it would be best

to continue using the test which had been shown useful over the years. This does not imply that inconsistencies are the result solely of one test or the other. Both tests could probably be improved and perhaps some combination of the two would result in an instrument more valid and useful than either test taken separately. Hopefully, through the study, instruments of testing interests will be improved to facilitate better and more accurate counseling of students.

## CHAPTER II

### REVIEW OF THE LITERATURE

The following analysis of research studies was related to the problem of this investigation. Related studies were discussed in reverse chronological order, beginning with the most recent and most pertinent studies and proceeding back to the oldest and least pertinent studies. Only those studies which are especially pertinent were reviewed. The review of literature included studies involved with (1) comparisons of the Strong Vocational Interest Blank with the Kuder Occupational interest Survey, Form DD, (2) comparisons of the Strong Vocational Interest Blank with the Kuder Preference Record - Occupational, Form D, and (3) comparisons of the Strong Vocational Interest Blank with the Kuder Preference Record (all other forms).

#### I. COMPARISONS OF THE STRONG VOCATIONAL INTEREST BLANK WITH THE KUDER OCCUPATIONAL INTEREST SURVEY, FORM DD

No studies have been found comparing the Strong Vocational Interest Blank with the Kuder Occupational Interest Survey, Form DD. The newness of the Kuder (published in 1966) would account for the lack of research. No such studies were mentioned in either the test manuals or in Buross' Sixth Mental Measurements Yearbook. After conferring with several



prominent men in the field of vocational interest testing, no current research comparing these two tests was discovered. Some of the men contacted were: Dr. Danskin, Counseling Center, Kansas State University; Dr. Wiesner, Counseling Center, Kansas State University; a report made by a representative of Science Research Association on the new Kuder Occupational Interest Survey, Form DD, at the National Personnel and Guidance Association convention, 1967, Dallas, Texas; and Dr. David P. Campbell, author of the current manual for the Strong Vocational Interest Blank.

## II. COMPARISONS OF THE STRONG VOCATIONAL INTEREST BLANK WITH THE KUDER PREFERENCE RECORD - OCCUPATIONAL, FORM D

Two studies have been found comparing the Strong Vocational Interest Blank with the Kuder Preference Record - Occupational, Form D.

Michael P. Joseph compared eight same-named scales on the Strong Vocational Interest Blank and the Kuder Preference Record - Occupational, Form D.<sup>13</sup> Although the specific reference could not be obtained, Dr. David P. Campbell did make some comments on this study in his review of the test.

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<sup>13</sup> Michael P. Joseph, "The Strong Vocational Interest Blank and the Kuder Preference Record - Occupational, Form D: A Comparative Study of Eight Same-Named Scales," Yearbook of the National Council of Measurement in Education, 18:145-54, 1961.

The study used forty-five students and compared their responses on eight same-named scales with a median correlation coefficient of .50. Another study was reported in the same paper, using 164 students on ten same-named scales with a median correlation coefficient of .45.<sup>14</sup> The significance levels of the two correlation coefficients were not reported, but they were both significant at the .01 level.<sup>15</sup>

A comprehensive study was made by Paul King, Gwendolyn Norrell, and G. Pat Powers in which the relationships between twin scales on the Strong Vocational Interest Blank and the Kuder Preference Record - Occupational, Form D were studied. Both tests were administered to 464 male students in the College of Business at Michigan State University. Although a high percentage of these students were freshmen, the group was heterogeneous in terms of age and socioeconomic level. In general, it was found that the correlations between identical twin scales were rather low, the average coefficient being .370. Many twin scales correlated higher with supposedly unrelated scales than they did with their identical twin. The highest negative correlations were: SVIB - Farmer

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<sup>14</sup>Oscar K. Buros, The Sixth Mental Measurements Yearbook (Highland Park, New Jersey: The Gryphen Press, 1965), p. 1063.

<sup>15</sup>J. P. Guilford, Fundamental Statistics in Psychology and Education (New York, New York: McGraw-Hill Book Company, 1965), pp. 580-581.



and Kuder Industrial Psychologist,  $-.588$ ; SVIB - Farmer and Kuder - High School Counselor,  $-.586$ ; and SVIB - Farmer and Kuder - Personnel Manager,  $-.574$ . The highest positive correlations were: SVIB - Psychologist and Kuder - Psychology Professor,  $.554$ ; SVIB - Sales Manager and Kuder - Insurance Agent,  $.554$ ; and SVIB - Life Insurance Agent and Kuder - Retail Clothier,  $.551$ . The correlation coefficients obtained for identical twin scales on the two tests were recorded in Table I. Two ways were indicated by which the counselor might avoid the embarrassment of explaining incompatible test findings to the client. The first was to assign only one interest test. And, the second was to familiarize oneself thoroughly with the tests one uses in his daily practice to the extent that the counselor can help the client integrate inconsistencies in test findings.<sup>16</sup>

### III. COMPARISONS OF THE STRONG VOCATIONAL INTEREST BLANK WITH THE KUDER PREFERENCE RECORD - VOCATIONAL, ALL OTHER FORMS

Several studies have been made comparing the Strong Vocational Interest Blank with the Kuder Preference Record - Vocational.

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<sup>16</sup>Paul King, Gwendolyn Norvell, and G. Pat Powers, "Relationships Between Twin Scales on the SVIB and the Kuder," Journal of Counseling Psychology, 10:395-401, 1963.

TABLE I

CORRELATION COEFFICIENTS FOR IDENTICAL TWIN TESTS ON THE  
 KUDER PREFERENCE RECORD - OCCUPATIONAL, FORM D, AND  
 THE STRONG VOCATIONAL INTEREST BLANK (MEN)(N=464).  
 FROM A STUDY BY KING, NORRELL, AND POWERS

Twin tests	r coefficient
1. Farmer	.471
2. Forester	.449
3. Minister	.518
4. Physician	.411
5. Y.M.C.A. secretary	.436
6. School superintendent	.422
7. Accountant	.295
8. Journalist	.330
9. Architect	.341
10. Lawyer	.352
11. Dentist	.318
12. Veterinarian	.221
13. Chemist	.386
14. Pharmacist (Druggist: Kuder)	.087

Student ratings. Malcolm attempted to determine the relative usefulness of four extensively used vocational interest inventories in counseling at various academic levels. The four inventories selected for study were believed to be those most extensively used: Cleeton's Vocational Interest Inventory, Kuder's Preference Record, Lee and Thorpe's Occupational Interest Inventory, and Strong's Vocational Interest Blank. The subjects were drawn from three distinct sources: high school, college, and graduate school. There was an equal number of men and women in each group. Each of the interest inventories was administered to the three groups of subjects and they were used in a counseling situation. Then, both the subjects and the counselors rated the inventories on a questionnaire. The Kuder was judged the most useful inventory for all three women's groups and for high school men, and was close second for college men. The Strong was judged best for college and graduate men. The Lee-Thorpe was second for all women's groups while the Cleeton ranked fourth in almost every instance.<sup>17</sup>

In a study of fifty twelfth-grade boys by Gordon and Herkness, the subjects were asked to rate seven different interest inventories on five questions concerning their relative usefulness. The results were shown in Table II.

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<sup>17</sup>David Donald Malcolm, "Which Interest Inventory Should I Use?" Journal of Educational Research, 44:91-8, October, 1950.

TABLE II  
ANSWERS TO QUESTIONS EVOKING PUPIL REACTION TO  
INVENTORIES. FROM A STUDY BY GORDON  
AND HERKNESS

	Cleeton	Garritson	Gentry	Kuder	LeSuer	Strong	Thurstone	Total
1. Which of the seven inventories did you find easiest to comprehend, both from directions, and for answering and the phrasing of the questions themselves?	1	4	0	32	6	2	5	50
2. In which test did you find it easiest to record your answers?	0	1	0	38	4	2	5	50
3. In which test did you find the individual items (collectively) of greatest interest and scope?	10	2	11	9	0	17	1	50
4. In which test was the mechanical set-up most attractive and interesting?	5	2	9	23	0	10	1	50
5. Which test yielded results which were most satisfying to you? (Not necessarily agreeing with preconceived ideas.)	3	5	13	10	1	15	3	50

The Kuder was rated highest on questions one, two, and four while the Strong was rated highest on questions three and five. The Strong Vocational Interest Blank for Men was deemed most productive of answers that were satisfying. This may mean that the scores were in agreement with the boys' own pre-conceived notions of their interests. The entire group of fifty boys, with three exceptions, expressed the opinion that they had gained some useful knowledge of themselves and some help in making choices of vocations.<sup>18</sup>

Fakability. Longstaff, in a study designed to compare the fakability of the Strong Vocational Interest Blank and the Kuder Preference Record with fifty-nine subjects, made the following conclusions: (1) Both tests are decidedly fakable, (2) Some interest categories are more fakable than others, (3) Women are less successful in faking than men, (4) The Strong test, in general, is easier to fake upward than the Kuder, while the Kuder is easier to fake downward than the Strong, (5) It does not follow that much faking goes on in actual use of these tests. The potential danger is present, however, (6) The interest maturity and occupational level scores behave as would be expected. Further study of the I.M. scale as an index of faking is indicated, (7) A new

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<sup>18</sup>Hans C. Gordon and Walter W. Herkness, Jr., "Pupils Appraise Vocational Interest Blanks," Occupations, 20:100-2, November, 1941.

set of directions should probably be made for both tests in order to minimize faking, (8) Further research is indicated to explore the possibility of developing an empirical scale to detect faking. It was found that 74 per cent of the male subjects were able to successfully fake upward one or two letter grades on seven out of eight of the interest categories on the Kuder.<sup>19</sup>

Predictive power. Garrett compared the predictive power of the Strong Vocational Interest Blank and the Kuder Preference Record - Vocational on eighty-four graduated male students from the University of Missouri. It was found that when a background of interview information, personal data, and results of other tests were available, college counselors were able to predict occupational classification equally well whether or not the Kuder Preference Record - Vocational or the Strong Vocational Interest Blank was added. Neither inventory, when added, produced a significant increase in accuracy of prediction over that achieved through the use of the basic data alone. Further tests indicated that prediction, under all conditions and by all predictors, achieved a

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<sup>19</sup>Howard P. Longstaff, "Fakability of the Strong Interest Blank and the Kuder Preference Record," Journal of Applied Psychology, 32:360-9, August, 1948.



greater accuracy than that to be expected by chance.<sup>20</sup>

Comparison with self-ratings. In a study designed to use the same method of determining the relative agreement between test scores on both the Strong Vocational Interest Blank and the Kuder Preference Record with students' self-ratings, Berdie utilized 500 men who varied in age from 14 to 37. Kuder defines significant scores as being 75th percentile and above. Strong stated that scores of A and B+ on his test are significant. The number of significant scores, as defined by these authorities, is much greater on the Kuder test in eight of nine areas, and only one area, the sub-professional or technical, has more significant scores on the Strong test. The median contingency coefficient between the Strong test and self-ratings was .43; between the Kuder test and self-ratings, .52. The coefficients showing the degree of relationship in each area between each of the two tests and self-ratings were presented in Table III. The chi squares were all statistically significant beyond the 1 per cent level of probability. The results presented here were in general agreement with the results obtained by other investigators, and the correlation between measured and self-estimated

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<sup>20</sup>Gene Aubrey Garrett, "A Comparison of the Predictive Power of the Kuder Preference Record and the Strong Vocational Interest Blank in a Counseling Setting," Doctor's Thesis, 1961 (DA 22:1506).

TABLE III

CONTINGENCY COEFFICIENTS SHOWING RELATIONSHIPS BETWEEN  
 SELF-RATINGS OF VOCATIONAL INTERESTS AND SCORES  
 ON THE STRONG VOCATIONAL INTEREST BLANK  
 AND ON THE KUDER PREFERENCE RECORD.  
 FROM A STUDY BY BERDIE

Occupational area	C with Strong	C with Kuder
Technical	.55	.47
Computational	.61	.34
Physical Sciences	.32	.46
Social Service	.43	.52
Musical	.39	.60
Sales	.58	.58
Biological Sciences	.27	.30
Verbal - Literary	.51	.61
Artistic	.33	.58
Clerical	.61	.52



interests approximates .50. In agreement with Patterson's hypothesis concerning the relative subtlety of the two tests, scores on the Kuder tended to have a closer relationship to self-ratings of interests than did scores on the Strong.<sup>21</sup> This may have been a function not only of the items in the tests but also of the categories used in grouping the scales and defining the self-ratings, although these categories were achieved through careful study of both tests. Also, in estimating Kuder scores, the subject needed to consider only his similarities to men in the defined groups, but in estimating Strong scores, he needed to consider both how he resembled men in the defined group and also how he differed from men in general.<sup>22</sup>

Statistical comparisons. Namani administered the Strong Vocational Interest Blank for Men and the Kuder Preference Record - Vocational to 108 males, using fifty males as a cross-validation group. The ultimate objective of the study was to discover criteria by which one could identify the members of a group to whom the Kuder inventory was administered, who would be expected to indicate high correlations

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<sup>21</sup>D. G. Patterson, "Vocational Interest Inventories in Selection," Occupations, 25:152-53, 1946.

<sup>22</sup>Ralph F. Berdie, "Scores on the Strong Vocational Interest Blank and the Kuder Preference Record in Relation to Self Ratings," Journal of Applied Psychology, 34:42-9, February, 1950.

on the Kuder and the Strong if the second inventory was also administered to them. Comparisons were made between the 25 per cent of the test group (27 cases) which displayed a rank order correlation of .72 or greater and the 25 per cent of test group (27 cases) which displayed a rank order correlation of .31 or less. Two of the twenty-six factors studied indicated relationships between the high and low groups which were statistically significant. Students exhibiting "realism" of occupations and "agreement" between their best-liked subjects in high school and their related Kuder scores would be expected to have a tendency (two to one) to have high correlations (above .72) between their scores on the Kuder and Strong inventories.<sup>23</sup>

Peters administered the Kuder Preference Record to twenty-four first-year college women who several months previously had taken the Strong Vocational Interest Inventory for Women. The scales of the Strong Inventory were placed into related groups, and representative scales of each group were studied with the comparable scales of the Kuder Preference Record. The students' new scores on each scale were translated into percentile scores. The percentile scores were studied with regard to the intercorrelations which

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<sup>23</sup>Abdel-Kader Namani, "Factors Associated with High and Low Correlations Between Individuals' Scores on Two Interest Inventories," Doctor's Thesis, Cornell University, 1958 (DA 19:2538).

existed between each and every other representative scale of the two inventories. From the original nine scales of the two inventories, it was found that there exist five inter-correlations which should be given serious consideration by personnel workers and counselors: (1) the SVIB - Physicians and the Kuder - Scientific Activities  $+ .38$ ; (2) the SVIB - Office Workers and the Kuder - Computational Activities  $+ .46$ ; (3) the SVIB - Authors and the Kuder - Literary Activities  $+ .42$ ; (4) the SVIB - Lawyers and the Kuder - Scientific Activities  $+ .41$ ; and (5) the SVIB - Lawyers and the Kuder - Social Service Activities  $+ .52$ . None of these correlation coefficients were significant at even the  $.10$  level.<sup>24</sup>

Patterson compared Kuder and Strong interest profiles for one subject and found that the Kuder and Strong were in general agreement in the Sales and Social Service scales, but were in violent disagreement on the clerical work scale. Patterson believed that this disagreement was due primarily to the fact that the Strong blank was more subtle than the Kuder. The Kuder and the Strong both yield important information about an individual's interest patterns when obtained in a guidance situation. However, in a selection situation, it would appear that the Strong was to be preferred because it

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<sup>24</sup>Edwin F. Peters, "Vocational Interests As Measured by the Strong and Kuder Inventories," School and Society, 55:453-5, April 18, 1942.

was more subtle, and the vocational significance of liking or disliking each of 400 items is not so readily apparent to the person taking the test. This conclusion needs to be verified from data drawn from additional cases.<sup>25</sup>

Whittenborn, Triggs, and Feder made two studies comparing the Strong Vocational Interest Blank with the Kuder Preference Record. They found high agreement between the Kuder scientific area and the Strong II on the men's Strong and group IV on the women's Strong. They also found positive relationship between the Computational Scale on the Kuder and Group VIII on the men's Strong and group II on the women's Strong. Little agreement was expected or found between the Kuder Musical Scale and the men's or women's Strong. The extent of agreement between the Social Service key and the corresponding key of the men's Strong was quite marked, but the same extent of agreement fails to appear on the women's Strong. These data should be considered tentative.<sup>26</sup>

Triggs administered both the Strong Vocational Interest Blank and the Kuder Preference Record to 166 men and correlated the scores within each area of interest. The

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<sup>25</sup>Donald G. Patterson, "Vocational Interest Inventories in Selection," Occupations, 25:152-3, December, 1946.

<sup>26</sup>J. R. Wittenburn, Oralind Triggs, and Daniel D. Feder, "A Comparison of the Interest Measurement by the Kuder Preference Record and the Strong Vocational Interest Blanks for Men and Women," Educational and Psychological Measurement, 3:239-57, August, 1943.

correlations ranged from  $-.52$  to  $+.73$  and include several correlation coefficients of  $+.60$  or above. The specific correlation coefficients may be observed in Appendix A. On the whole, Triggs' study has confirmed relationships which one who was familiar with the instruments might expect to find. A careful study of these data will help counselors to understand and utilize interest measurement more meaningfully in the counseling of students.<sup>27</sup>

Word usage. Several studies have also been made which compared the word usage of the Strong Vocational Interest Blank and the Kuder Preference Record. It was questionable whether either interest inventory was appropriate for ninth grade students or younger without some readjustments of the word usage in the tests. Generally, it was agreed that the Kuder was appropriate for a lower level vocabulary than the Strong. These results would have been expected, however, because Strong advocates using this test only with persons of age 17 or older.<sup>28</sup>

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<sup>27</sup>Francis Oralind Triggs, "A Further Comparison of Interest Measurement by the Kuder Preference Record and the Strong Vocational Interest Blank for Men," Journal of Educational Research, 37:538-44, March, 1944.

<sup>28</sup>Edward C. Roeber, "A Comparison of Seven Interest Inventories With Respect to Word Usage," Journal of Educational Research, 42:8-17, September, 1948; Buford Steffire, "The Reading Difficulty of Interest Inventories," Occupations, 26:95-6, November, 1947.

## CHAPTER III

### THE INSTRUMENTS

The two instruments used to measure vocational interests: the Strong Vocational Interest Blank and the Kuder Occupational Interest Survey, Form DD, were examined for validity, reliability, and normative criterion groups.

#### I. THE STRONG VOCATIONAL INTEREST BLANK

Concurrent validity. The occupational-interest scales were developed to distinguish members of occupational groups from people-in-general. To establish the validity of the scales, it was necessary to show that they did separate various groups. The statistic used to indicate the degree of separation was the per cent overlap. This figure, with a range from zero to 100 per cent, gave the per cent of scores in one distribution that can be matched by scores in another distribution. Per cent overlaps for each scale were presented in Appendix B. They ranged from 15 to 52, with a median of 31 per cent overlap. That the Strong Vocational Interest Blank scales do not separate all possible pairs of occupations was probably not a reflection of poor validity but an indication of similarity in interests between some occupations. In general, the scales had little over-lap and



were successful in separating occupational groups from people-in-general.<sup>29</sup>

Predictive validity. Since the Strong Vocational Interest Blank was widely used in the guidance of young people, it was necessary to show that interests did not change appreciably over considerable periods of time, and that there was agreement between interest test scores and subsequent validity. Consistency of interests will be discussed under reliability.

Several studies have been made demonstrating good predictive validity. Strong's classic 18-year follow-up of 633 Stanford University students revealed a high degree of agreement between interest scores in 1927-30 and occupations engaged in in 1949. Scores obtained for 663 students on their "own" eventual occupational scales while they were in college can be seen in Appendix C. These scores predicted fairly accurately the occupations the students would be engaged in eighteen years later. The expectancy ratios were conservative estimates because they did not take into account those who entered occupations closely related to the ones on which they had obtained high scores earlier.<sup>30</sup>

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<sup>29</sup>Edward K. Strong, The Strong Vocational Interest Blank Manual (Stanford: The Stanford University Press, 1966), pp. 32-36.

<sup>30</sup>Edward K. Strong, Jr., Vocational Interests 18 Years After College (Minneapolis, Minnesota: The University of Minnesota Press, 1955).

In two other prediction studies, Berdie reported scores on the Strong Vocational Interest Blank. Some students took the test while they were high school seniors; others were graduating from medical school, law school, dental school, journalism school, engineering school, architectural school, or as accountant majors from a business school. The results showed that the seven groups differed considerably in their measured interests while they were in high school, but not always in the expected direction.<sup>31</sup>

Schletzer recently retested some of the students from the Berdie groups after they had settled into their occupations, an average of eight years after the original high school testing. The samples drawn were small, and conclusions must be guarded. The mean for each group on its "own" scale, both for the test taken during the fall of the high school senior year and for the retest taken after two or three years of occupational experience, is reported in Appendix D. The results indicated moderate to good predictive power for the high-school-senior Strongs.<sup>32</sup>

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<sup>31</sup>R. F. Berdie, "Strong Vocational Interest Blank Scores of High School Seniors and Their Later Occupational Entry," Journal of Applied Psychology, 44:161-165, 1960; R. F. Berdie, "Strong Vocational Interest Blank Scores of High School Seniors and Their Later Occupational Entry, II," Journal of Applied Psychology, 49:188-93, 1965.

<sup>32</sup>Vera M. Schletzer, "A Study of the Predictive Effectiveness of the Strong Vocational Interest Blank for Job Satisfaction," Doctor's Thesis, University of Minnesota, 1963.



In summary, most studies have shown good predictive validity for the Strong Vocational Interest Blank.

Split-half reliability. The average split-half or odd-even reliability coefficient is .88, as stated by Harold D. Carter, Research Associate, Institute of Child Welfare, The University of California, in a review of the test for Buros' Mental Measurements Yearbook.<sup>33</sup>

Test-retest reliability. Test-retest data were reported in Appendix E for several groups over several time intervals. Means, standard deviations, and test-retest correlations were reported for all scales for all groups. The time intervals between the initial testing and the retesting ranged from two weeks to thirty years, with corresponding median correlation coefficients of reliability ranging from .91 to .56. It should be reemphasized that the stability of an individual's scores on the SVIB varied with his age when first tested: after age 25, most people's interests changed very little; between ages 20 and 25, some mild changes appeared, but the usual finding was one of considerable stability; but between the ages of 15 and 20, there will be some people whose results showed considerable change.<sup>34</sup>

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<sup>33</sup>Oscar K. Buros, The 1940 Mental Measurements Yearbook (Stanford: The Stanford University Press, 1940), p. 1680.

<sup>34</sup>Edward K. Strong, The Strong Vocational Interest

Norm groups. The normative groups included from 147 to well over 1,000 persons, all of whom had been engaged in the specific occupation for at least three years and reported that they enjoyed their work. All of these people were under 55 years of age. Whenever possible, some minimum standard of success such as professional certification, membership in a professional society, or supervisory ratings, was established and used to eliminate the "marginal" members of the occupation. A brief description of each occupational norm group was given in the manual (pp. 56-67), including the number, mean age, mean education, year tested, references, and comments about the groups.<sup>35</sup>

## II. THE KUDER OCCUPATIONAL INTEREST SURVEY, FORM DD

Validity. Because the Kuder Occupational Interest Survey, Form DD, is a new test (published in 1966), the only studies found of either reliability or validity were those studies reported in the manual.

The validity studies reported were concerned with (1) errors of classification, or the frequency with which members of an occupational group obtained a higher score on a scale other than their own, (2) rank scores of core-group

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Blank Manual (Stanford: The Stanford University Press, 1966), pp. 26-29.

<sup>35</sup>Ibid., pp. 56-67.

members on their own scale, and (3) frequency of differences between an individual's score on his own scale and his highest score. Job-satisfaction studies based on the OIS were planned.

1. Errors of Classification - In order to compare a scoring system involving use of a general reference group with the new scoring system, responses for six cross-validation groups of ninety subjects each were scored twice on scales for their own occupation and the other five, once using the scoring method of Form D and once using the new scoring method of Form DD. A talley was made of the frequency with which an individual obtained a higher score on a scale other than his own for each possible pairing of the six scales involved - five comparisons for each of the 540 subjects. On the scales developed with the use of the general reference group, subjects obtained a higher score in an occupation other than their own in 209 comparisons. When lambda coefficients were used (the new OIS scoring system), this number was reduced to 142 - a reduction of 32 per cent. The incidence of misclassification averaged 6 per cent when ties were counted as errors. See Appendix F for the comparison of errors of classification for both methods of scoring.<sup>36</sup>

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<sup>36</sup>Frederic Kuder, Kuder Occupational Interest Survey Form DD, General Manual (Chicago, Illinois: Science Research Associates, Inc., 1966), pp. 29-34.

A second errors-of-classification study, designed to determine the ability of the scales to differentiate between groups, involved the thirty core groups scored on all thirty scales. The distribution of highest scores was presented in Appendix G. It should be noted that where misclassifications appear to be somewhat more frequent, they usually occurred in very closely related fields, and perhaps should not be regarded as errors at all. The percentage of overlap between the groups was shown in Appendix H. The overlap ranged from 0 to 29.1 per cent, with a median overlap of 5.12 per cent. On the basis of the two studies described, it appeared to be a reasonable assumption that there are some factors that are common to most jobs, and therefore there is some genuine overlapping of one criterion by another to begin with.<sup>37</sup>

2. Rank of Score on Own Scale - A distribution of the frequency of ranks, one through six or lower for an individual's score on his own scale, was obtained for the members of the thirty-core groups - each scored across thirty scales (Appendix I).<sup>38</sup>

3. Frequency of Differences - The frequency of differences between an individual's score on his own scale and his highest score was obtained for 3,000 core-group members. For

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<sup>37</sup>Ibid., p. 24.

<sup>38</sup>Ibid., p. 34.

1,915 cases or 64 per cent of the total group, the score on a subject's own scale was either his highest score or within .009 of it; for 71 per cent, within .019 or one standard error of measurement; and for 90 per cent, within .069. Appendix J provided a graphic representation of the data which illustrate the ability of the scales to classify individuals correctly.<sup>39</sup>

Test-retest reliability. Two studies were made to determine the test-retest reliability for scores on the Kuder. One hundred students (high school seniors and college students of both sexes) were tested over a period of two weeks. The median reliability was .90. For each of the two high school groups, it was .91; for each of the two college groups, .90.

In another study, individual test-retest reliabilities were computed for 92 high school senior boys and 50 college senior women on 142 scales. For the high school boys, the median correlation coefficient was .93; for the college women, it was .96.

Reliability of consistency of the differences between scores also was computed. The differences between scores in each possible pair on four scales obtained in two administrations to 92 high school senior boys were correlated.

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<sup>39</sup>Ibid., pp. 34-37.

Correlations ranged from .84 to .92, demonstrating a high degree of consistency for the scales involved.<sup>40</sup>

Norm groups. The normative groups included from 100 to 500 persons. The subjects were between 25 and 65 years of age, had been in the same occupation for at least 3 years, and met other standards of job satisfaction as used in developing the scales. Data for the occupational norm groups were collected between 1955 and 1965, for the most part between 1960 and 1965. Unless otherwise specified in the description of the criterion group, samples were selected from all parts of the country insofar as possible in accordance with the geographical distribution of members of the occupation. A brief description of each occupational norm group was given in the manual (pp. 43-49), including the number, mean age, standard deviation, and breakdown according to education.<sup>41</sup>

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<sup>40</sup>Ibid., p. 37.

<sup>41</sup>Ibid., pp. 43-49.



## CHAPTER IV

### PROCEDURES, METHODS, AND TECHNIQUES

In comparing the two interest tests which were described in the preceding chapter, the following discussion clearly stated and delimited the procedures which were carried out, the methods which were used in carrying out the procedures, and the techniques which were utilized in the research.

#### I. PROCEDURES

The sample. The sample consisted of 100 male freshman students who were randomly selected from the 1,400 male freshmen attending Kansas State University Spring Semester, 1967.

The writer was an instructor in the Physical Education Department during the time of the study, which greatly facilitated the sampling and administration of the tests. Every male student at Kansas State University was required to take an activity course in Basic Physical Education each semester of his freshman year. From the roll list of all Basic Physical Education Activity Courses, each freshman male was assigned a number. Then using the simple random sampling technique, as described by Blalock on pages 393-396 of his book Social Statistics and the corresponding table of random units, pages 437-440, a sample of 100 freshman males was



drawn.<sup>42</sup> The sample then was a random representation of all freshman males at Kansas State University Spring Semester, 1967.

Administration of the tests. Using the roll book again for all Basic Physical Education Activity Courses, the following information was obtained for each student: the name of the Physical Education Activity Course, the time that it met, the meeting place, and the name of the instructor who taught the course. The writer obtained permission from each instructor to administer the tests to each randomly selected subject during class time. The selected students were dismissed from the Physical Education Activity classes for that purpose. Two separate administration periods were required for each activity class. Most subjects took about forty-five minutes to complete the Strong Vocational Interest Blank and about thirty minutes to complete the Kuder Occupational Interest Survey, Form DD. At the end of the scheduled class period, the few subjects who had not finished were given the choice of either staying longer and finishing the test or finishing it at home and turning it in at the Physical Education Office. There were few subjects who did not finish the Strong Vocational Interest Blank and all subjects finished

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<sup>42</sup>Hubert M. Blalock, Jr., Social Statistics (New York, New York: McGraw-Hill Book Company, 1960), pp. 393-396, 437-440.

the Kuder Occupational Interest Survey, Form DD. Before administering the tests, the writer gave the following explanation of the purpose.

For my Master's Thesis I am comparing two occupational interest inventories to determine how much they measure the same thing. I have selected a random sample of 100 freshmen out of all K-State freshmen and you are one of these 100. Will you help me out by taking these two tests?

All of the 100 subjects were willing to take both tests. It was felt necessary and appropriate to inform the subjects that the purpose of the study was to compare the two tests and not the individual subjects. The directions for each test were given as stated in the test manuals.

Of the 100 freshman males in the sample, several could not be reached through Basic Physical Education Activity Courses. Some were absent, had transferred, or had dropped the course while others were excused because they participated in athletics. Freshman athletes were not required to take Basic Physical Education classes. All freshman male students, however, were included in the population from which the sample was drawn. The absent students were contacted at their residences and took the tests there. The final results included all 100 subjects from the initial sample.

Scoring. The tests were marked by electronic pencils and were machine-scored by the two test companies. All materials and scoring for the Strong Vocational Interest Blank

were provided by the Counseling Center, Kansas State University. Part of the materials and scoring for the Kuder Occupational Interest Survey, Form DD, were provided by the Education Department, Kansas State University.

Both test companies returned two copies of the interest profiles for each student. One copy was kept for research and further reference. The other copies of both tests, along with a letter thanking the students for their cooperation and explaining how they might interpret their scores and where they could obtain additional help, were sent to each subject who participated in the study. See Appendix K for a copy of the letter. Dr. Danskin, head of the Counseling Center, Kansas State University, also provided two days for group interpretation for those subjects who were interested. The policy was followed that whenever students are willing to give their time and effort in cooperation with a research project, they should be allowed to see the results and receive any other information which may be helpful to them.

Comparison of the tests. After the tests had been returned, they were examined for any irregularities or low validities as given by the V scale on the Kuder Occupational Interest Survey, Form DD. Two tests were discovered to be highly irregular and were not used in the final comparison. One of them, although having an adequate V score, had such

low interest scores (the highest being .13) that it was not considered to be an appropriate measure of the individual's interests. The other test had an extremely low validity score and all of the interest scores were negative. In his manual, Kuder advised that in cases with such scores the results could not be considered a valid representation of the individual's interest.<sup>43</sup>

The data were then regrouped so that each score for an occupation on the Strong Vocational Interest Blank was matched with the corresponding score for the comparable occupation on the Kuder Occupational Interest Survey, Form DD. The data were punched out on IBM computer cards and the correlations for each pair of occupations to be compared were calculated by the IBM 1410 Computer System, Kansas State University.

The Pearson Product-moment correlation coefficients in the study were computed by using the following equation:<sup>44</sup>

$$r_{xy} = \frac{\sum xy - \frac{\sum x \sum y}{N}}{\sqrt{\left[ \sum x^2 - \frac{(\sum x)^2}{N} \right] \left[ \sum y^2 - \frac{(\sum y)^2}{N} \right]}}$$

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<sup>43</sup>G. Frederic Kuder, Kuder Occupational Interest Survey, Form DD, General Manual (Chicago, Illinois: Science Research Associates, Inc., 1966), pp. 22-25.

<sup>44</sup>William L. Hays, Statistics For Psychologists (New York, New York: Holt, Rinehart and Winston, 1963), p. 506.

The formula was derived from the standard formula where  $N$  was the sample size (98) and  $x$  and  $y$  were the variables. The significance of each correlation coefficient was determined using a table from Guilford's book Fundamental Statistics in Psychology and Education, designed to show significance at the .01 and .05 levels of given correlation coefficients and given  $N$ 's.<sup>45</sup>

The Guilford table shows that with an  $N$  of 98, a correlation coefficient would have to be .197 or greater to be significant at the .05 level and would have to be .257 or greater to be significant at the .01 level.

## II. METHODS

The method used was predominantly descriptive to determine what was the case with respect to the problem.<sup>46</sup> Data were classified, analyzed, and interpreted in order to develop meanings that were instrumental in the solution of the problem. The extent of relationship between the Strong Vocational Interest Blank and the Kuder Occupational Interest Survey, Form DD, resulted from the study. Given the data on

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<sup>45</sup>J. P. Guilford, Fundamental Statistics in Psychology and Education (New York: McGraw-Hill Book Company, 1965), pp. 580-581.

<sup>46</sup>G. D. McGrath, James J. Jelinek, and Raymond E. Wochner, Educational Research Methods (New York: The Ronald Press Company, 1963), pp. 65-69.

hand, the question answered was how much the two tests measured the same factors on specific occupational scales. The valuational method (used to determine what should be the case with respect to the problem) was utilized only in making evaluational comments and recommendations in the chapter on Summary and Conclusions. The study, then, was descriptive in nature, with a few valuational comments at the end.

### III. TECHNIQUES

The technique used in the study was analytical in that the variables themselves were not manipulated to effect a change and no control groups were utilized.<sup>47</sup> The purpose of the study was to examine existing relationships between sets of paired variables; that is, the sets of students' interest scores for a given occupation on each test: the Strong Vocational Interest Blank and the Kuder Occupational Interest Survey, Form DD. The study was not predictive; no attempts were made to use either test in predicting scores on the other test. Yet the study was more than a mere description of past or current events in that tests were given, variables compared, comparisons analyzed, and inferences made. Analysis was the major technique utilized in the research.

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<sup>47</sup>Ibid., pp. 69-89.



## CHAPTER V

### RESULTS

Student scores on the two tests: the Strong Vocational Interest Blank and the Kuder Occupational Interest Survey, Form DD, were compared on a total of seventy-six paired scales. Of these seventy-six paired scales, twenty-seven were named the same on both tests. Only scales which were assumed to be measuring the same factors were compared.

The highest positive correlations were: SVIB - Carpenter and Kuder - Carpenter, .672; SVIB - Farmer and Kuder - Farmer, .577; SVIB - Engineer and Kuder - Electrical Engineer, .527; SVIB - Psychiatrist and Kuder - Psychiatrist, .515; and SVIB - Psychiatrist and Kuder - Clinical Psychologist, .507. The lowest correlations (and highest negative correlations) were: SVIB - School Superintendent and Kuder - School Superintendent, -.143; SVIB - Rehabilitation Counselor and Kuder - Physical Therapist, -.138; SVIB - Personnel Director and Kuder - Psychology Professor, -.092; SVIB - Accountant and Kuder - Mathematician, -.060; SVIB - Mathematician and Kuder - Heating and Air Conditioning Engineer, -.036; SVIB - Mathematician and Kuder - Industrial Engineer, -.023; SVIB - Personnel Director and Kuder - Clinical Psychologist, -.014; and SVIB - Life Insurance Salesman and Kuder - Insurance Agent, 0.00.



Of the twenty-seven same-named scales, the highest correlation was on Carpenter .672, followed by Farmer .577 and by Psychiatrist .515. The lowest correlation of the twenty-seven same-named scales was on School Superintendent -.143, followed by Journalist .142 and by Y.M.C.A. Secretary .157. Fisher's  $Z$  transformations were used in averaging all correlation coefficients of the twenty-seven same-named scales.<sup>48</sup> The mean correlation coefficient was .317 for these scales. The mean correlation coefficient was increased to .354 when correlation coefficients for the following scales were included in the averaging: the SVIB Engineer scale and the Kuder - Civil Engineer, Electrical Engineer, Heating and Air Conditioning Engineer, Industrial Engineer, Mechanical Engineer, Mining and Metal Engineer; between SVIB - Psychologist and Kuder - Clinical Psychologist, Counseling Psychologist, Industrial Psychologist; and between SVIB - Social Worker and Kuder - Social Case Worker, Social Worker Group, and Social Worker Psychiatric. The correlation coefficients between the twenty-seven same-named scales are listed in Table IV.

The correlation coefficients between the remaining non-same-named scales (49) are listed in Table V. Fisher's

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<sup>48</sup>H. C. Fryer, Concepts and Methods of Experimental Statistics (Boston, Massachusetts: Allyn and Bacon, Inc., 1966), p. 227; E. S. Pearson and H. O. Hartley, Biometrika Tables for Statisticians, Volume 1, Table 14.

TABLE IV

CORRELATION COEFFICIENTS BETWEEN TWENTY-SEVEN SAME-NAMED  
 SCALES ON THE STRONG VOCATIONAL INTEREST BLANK AND  
 THE KUDER OCCUPATIONAL INTEREST SURVEY,  
 FORM DD (N = 98)

Same-named scales	r coefficient
1. Accountant	.289**
2. Architect	.251**
3. Banker	.241*
4. Purchasing Agent (Kuder - Buyer)	.393**
5. Carpenter	.672**
6. Chemist	.470**
7. Dentist	.289**
8. Farmer	.577**
9. Forest Service Man (Kuder - Forester)	.471**
10. Journalist	.142
11. Lawyer	.215*
12. Librarian	.279**
13. Mathematician	.304**
14. Math Science Teacher (Kuder - Math Teacher, H.S.)	.287**
15. Minister	.238*
16. Osteopath	.312**
17. Personnel Director	.154
18. Pharmacist	.226*
19. Physician	.385**
20. Policeman	.426**
21. Printer	.339**
22. Psychiatrist	.515**
23. Real Estate Salesman	.158
24. Math Science Teacher (Kuder - Science Teacher, H.S.)	.292**
25. School Superintendent	-.143
26. Veterinarian	.374**
27. Y.M.C.A. Secretary	.157

\*Significant at the .05 level of confidence.

\*\*Significant at the .01 level of confidence.

TABLE V

CORRELATION COEFFICIENTS BETWEEN FORTY-NINE SIMILAR  
NON-SAME-NAMED SCALES ON THE STRONG VOCATIONAL  
INTEREST BLANK AND THE KUDER OCCUPATIONAL  
INTEREST SURVEY, FORM DD (N = 98)

Strong scale	Kuder scale	r coefficient
1. Senior CPA	Accountant, Cert.P.	.267**
2. Artist	Architect	.135
3. Accountant	Bookkeeper	.218*
4. Biologist	Chemist	.462**
5. Personnel Director	Counselor, H.S.	.055
6. Psychologist	" "	.019
7. Psychiatrist	" "	.213*
8. Rehabilitation Counselor	" "	.135
9. Y.M.C.A. Secretary	" "	.115
10. Engineer	Engineer, Civil	.478**
11. Mathematician	" "	.069
12. Engineer	Engineer, Electrical	.527**
13. Mathematician	" "	.107
14. Engineer	Engineer, Heating Air Conditioning	.483**
15. Mathematician	" "	-.036
16. Engineer	Engineer, Industrial	.397**
17. Mathematician	" "	-.023
18. Engineer	Engineer, Mechanical	.498**
19. Mathematician	" "	.088
20. Engineer	Engineer, Mining and Metal	.476**
21. Mathematician	" "	.130
22. Life Insurance Salesman	Insurance Agent	0.0
23. Accountant	Mathematician	-.060
24. Computer Programmer	"	.395**
25. Engineer	"	.396**
26. Math Science Teacher	"	.151
27. Physician	Pediatrician	.426**
28. Rehabilitation Counselor	Physical Therapist	-.138
29. Physician	Podiatrist	.245*
30. Psychologist	Psychiatrist	.322**
31. Personnel Director	Psychologist, Clinical	-.014
32. Psychologist	" "	.323**
33. Psychiatrist	" "	.507**
34. Personnel Director	Psychologist, Coun- selling	.048
35. Psychologist	" "	.234*

TABLE V (concl.)

Strong scale	Kuder scale	r coefficient
36. Psychiatrist	Psychologist, Counseling	.423**
37. Rehabilitation Counselor	" "	.226*
38. Psychologist	Psychologist, Industrial	.114
39. Psychiatrist	" "	.292**
40. Personnel Director	Psychology Professor	-.092
41. Psychologist	" "	.289**
42. Psychiatrist	" "	.413**
43. Social Worker	Social Case Worker	.299**
44. " "	Social Worker Group	.342**
45. Psychologist	Social Worker, Psychiatric	.222*
46. Psychiatrist	" "	.453**
47. Social Worker	" "	.332**
48. Mathematician	Statistician	.160
49. Minister	University Pastor	.297**

\*Significant at the .05 level of confidence.

\*\*Significant at the .01 level of confidence.

z transformations were also used in averaging all seventy-six correlation coefficients.<sup>49</sup> The mean correlation coefficient was .262 for all seventy-six scales.

As was mentioned earlier, a similar study was made by King, Norrell, and Powers, comparing the Strong Vocational Interest Blank with the Kuder Preference Record - Occupational, Form D.<sup>50</sup> They also computed correlation coefficients for identical twin tests (same-named scales), as shown in Table I. In light of Kuder's claims that the new concept in scoring used by Form DD resulted in better discrimination between occupational groups than the traditional approach used by Form D and Strong, the results of the study comparing Form D scales with the Strong were compared to the similar scale correlations in this study. Table VI shows the correlations between like-named scales on the Strong and Forms DD and D of the Kuder. Five correlations were found to be higher when the Strong was compared with Form DD than when compared with Form D; lower correlations were found on nine same-named scales. The mean correlation between the fourteen same-named scales on the Strong and Form D was reported at .370, using Fisher's z transformations.<sup>51</sup> The mean

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<sup>49</sup>Ibid.

<sup>50</sup>Supra, Chapter II, p. 15.

<sup>51</sup>Pryer, Pearson, and Hartley, loc. cit.

TABLE VI

CORRELATION COEFFICIENTS BETWEEN SAME-NAMED SCALES ON  
THE STRONG VOCATIONAL INTEREST BLANK AND THE KUDER  
OCCUPATIONAL INTEREST SURVEY, FORM DD, AND THE  
KUDER PREFERENCE RECORD - OCCUPATIONAL,  
FORM D

Same-named scales	r coefficient Strong with DD	r coefficient Strong with D <sup>a</sup>
1. Farmer	.577**	.471**
2. Forester	.471**	.449**
3. Minister	.238*	.518**
4. Physician	.385**	.411**
5. Y.M.C.A. Secretary	.157	.436**
6. School Superintendent	-.143	.422**
7. Accountant	.289**	.295**
8. Journalist	.142	.330**
9. Architect	.251**	.341**
10. Lawyer	.215*	.352**
11. Dentist	.289**	.318**
12. Veterinarian	.279**	.221**
13. Chemist	.470**	.386**
14. Pharmacist	.226*	.087

<sup>a</sup>From a study by King, Norrell, and Powers.

\*Significant at the .05 level of confidence.

\*\*Significant at the .01 level of confidence.



correlation between the same fourteen same-named scales on the Strong and Form DD was .290. Thus, there was generally lower correlation between same-named scales on the Strong and Form DD than there was on the Strong and Form D. This result was expected, however, because Form D and the Strong both make use of men-in-general groups in their scoring procedure while Form DD abolished the concept of the men-in-general group, and used an entirely different scoring technique.

At any rate, the highest correlation coefficient obtained on either study was .672 on this study between SVIB - Carpenter and Kuder - Carpenter. For purposes of prediction, a correlation coefficient of .672 would account for only about 45 per cent of the variance, and most of the correlation coefficients were well below .50 which would account for less than 25 per cent of the variance. Correlations from .35 to .50 are of little predictive value for individuals and although one would not be interested in predicting one test score from the other, it is readily apparent that these two tests are not measuring the same factors.



## CHAPTER VI

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The following discussion consisted of a summary of the study, conclusions drawn from the results of the study, and the writer's recommendations for future use of the two interest tests.

#### I. SUMMARY

The purpose of this study was to compare similar scales on the Strong Vocational Interest Blank and the Kuder Occupational Interest Survey, Form DD, to determine to what extent they actually measure the same factors.

The information resulting from the comparison would be useful to counselors in deciding which interest test to use in the counseling situation. The results would also point out inconsistencies and contradictions in the use of both interest tests with the same client.

The sample consisted of 100 male freshman students who were randomly selected from the 1,400 male freshmen attending Kansas State University Spring Semester, 1967.

The data were reported in the form of Pearson product moment correlation coefficients between the student's interest scores on the two tests for seventy-six different occupations. Each pair of occupations compared was assumed to be

related to each other in the nature of interests involved. Of the total seventy-six occupations compared, twenty-six were named the same on both tests. The degree of significance for each correlation coefficient was reported at both the .05 and .01 levels.

It was found that, in general, the two tests were measuring different factors. The mean correlation coefficient for all seventy-six scales compared was .262. The mean correlation coefficient for the twenty-seven scales which were named the same was .317. By including the engineering scales and a few others which seemed to be measuring the same factors, even though not named the same, the mean correlation coefficient was increased to .354. Only five correlation coefficients were found to be above .50, the highest being .672 between the Carpenter scales on the two tests. For predictive purposes, a correlation coefficient of .50 means that only about 25 per cent of the variance of one variable is being accounted for by the other.

## II. CONCLUSIONS

There would be very few times that a student's score on one interest test would be predicted from his score on another interest test. Even so, a direct application can be made on using these two tests in the counseling situation. Each test gave the student a score showing how similar his

interests were to those of men in each of many occupations. For example, both tests gave the student a score showing how similar his interests were to those of School Superintendents. Yet, the results of this study showed that these two different scales for School Superintendent correlated  $-.143$ . That means that the two test scores will not guide the student toward the same area, but will actually present to the student contradictory and inconsistent leads.

The perceptive counselor will have to go much deeper into these two tests than just looking at their scores. He needs to know what both Kuder and Strong mean when they compare a student's interest to that of a School Superintendent. What groups of School Superintendents did each test maker use as his criterion? Just looking into the brief description of the normative groups, as stated in the two test manuals, may help somewhat. Strong indicated his School Superintendents were from cities of 10,000 population or over, in all parts of the United States, of mean age 46, and of mean education 46.9. Kuder's School Superintendents were from towns of 5,000 or more, of mean age 52.4, and all college graduates. Would six years average age account for such a great difference between the two scales? At any rate, it is quite obvious that much more information is needed about these two norm groups before the difference can be accounted for in the correlation.

Perhaps the correlation coefficient was wrong. There is always that chance, and more research in the area would certainly be helpful.

In using these tests over many years, the perceptive counselor will begin to draw out much more information than just the scores. How does this student's low score, compared to those of School Superintendents, fit into his entire profile? How does his entire profile on one interest test compare to his entire profile on the other? Many questions need to be answered by and for the counselor before he can skillfully make use of both of these interest tests.

### III. RECOMMENDATIONS

There are advantages and disadvantages in using either one of these two interest tests. The Strong Vocational Interest Blank has been supported by much predictive validity data and has several studies showing good long-term reliability (.67 to .90). Kuder has not as yet published any predictive validity data, and his test-retest reliability studies were over a two-week period. The Kuder Occupational Interest Survey, Form DD, compares students' interest scores to norms which were developed between 1955 and 1965--for the most part, between 1960 and 1965. Several of Strong's norm groups were developed as long ago as 1934.

Until many questions are answered more clearly and more directly, the writer can only recommend that a counselor who wishes to use both of these tests should study them very carefully, attempting to determine why their scales are measuring different factors and what factors each scale is measuring. A counselor who wishes to choose between the two tests for a counseling situation would be well advised to stay with the Strong Vocational Interest Blank until the Kuder Occupational Interest Survey, Form DD, has more predictive validity data and long-term reliability data to back it up.

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APPENDIX A

CORRELATIONS BETWEEN KUDER PREFERENCE RECORD SCALES  
AND STRONG VOCATIONAL INTEREST BLANK KEYS.  
FROM A STUDY BY TRIGGS

TABLE I  
CORRELATIONS BETWEEN KUDER PREFERENCE RECORD SCALES AND STRONG  
VOCATIONAL INTEREST BLANK KEYS WHICH COMPRISE THE  
CREATIVE-SCIENTIFIC OCCUPATIONAL AREA  
(N = 166 Men)

Strong Vocational Interest Blank Keys	Kuder Preference Record Scales							
	Mechanical	Computational	Scientific	Personality	Artistic	Literary	Musical	Clerical
Artist.....	-.11	-.25*	.07	-.36*	.55*	.10	.21*	-.07
Psychologist.....	.075	.12	.36*	.41*	.18	.17	.14	.07
Architect.....	.15	-.22*	.22*	.44*	.67*	-.04	.18	-.21*
Physician.....	.11	.10	.56*	.55*	.32*	.07	.05	-.28*
Dentist.....	.37*	-.04	.45*	.45*	.45*	-.18	.01	-.31*

(Per an N of 166, according to Linquist's table, a correlation must at least have the value of .208 to be significant at the one percent level. Asterisk indicates significance).

TABLE III  
CORRELATIONS BETWEEN KUDER PREFERENCE RECORD SCALES AND STRONG  
VOCATIONAL INTEREST BLANK KEYS WHICH COMPRISE THE  
SUB-PROFESSIONAL OCCUPATIONS  
(N = 166 Men)

Strong Vocational Interest Blank Keys	Kuder Preference Record Scales							
	Mechanical	Computational	Scientific	Personality	Artistic	Literary	Musical	Clerical
Production Manager...	.36*	.17	.11	.07	.03	-.26*	-.16	-.12
Farmer.....	.64*	-.11	.33*	-.27*	.17	-.56*	-.16	-.07
Carpenter.....	.57*	.02	.29*	-.20	.28*	-.45*	.12	-.08
Printer.....	.53*	.13	.03	.24*	.23*	-.22*	-.04	-.18
Mathematics—physical	.47*	.09	.46*	-.26*	.01	-.27*	.12	-.05
Sc. Teacher.....	.53*	.02	.23*	.03	-.08	.31*	-.25*	.06
Forest Service Man....	.55*	-.18	.32*	-.16	.14	-.36*	-.30*	-.31*

TABLE II  
CORRELATIONS BETWEEN KUDER PREFERENCE RECORD SCALES AND STRONG  
VOCATIONAL INTEREST BLANK KEYS WHICH COMPRISE THE  
SCIENTIFIC OCCUPATIONAL AREA  
(N = 166 Men)

Strong Vocational Interest Blank Keys	Kuder Preference Record Scales							
	Mechanical	Computational	Scientific	Personality	Artistic	Literary	Musical	Clerical
Mathematician.....	.14	-.14	.47*	-.49*	.14	-.02	.65	-.07
Engineer.....	.72*	.14	.54*	-.31*	.25*	-.25*	-.19	-.20
Chemist.....	.51*	.08	.73*	-.52*	.20	-.21*	-.09	-.34*

TABLE IV

CORRELATIONS BETWEEN KUDER PREFERENCE RECORD SCALES AND STRONG VOCATIONAL INTEREST BLANK KEYS WHICH COMPRISE THE SOCIAL SERVICE AREA

(N = 166 Men)

Strong Vocational Interest Blank Keys	Kuder Preference Record Scales								
	Mechanical	Computational	Scientific	Persuasive	Artistic	Literary	Musical	Social Service	Clerical
YMCA Physical Director .....	.16	.18	.06	.05	.05	-.07	-.01	.25*	-.25*
Personnel Manager .....	.01	-.11	-.10	.40*	-.08	.25*	.03	.25*	-.55
YMCA Secretary .....	-.08	-.19	-.25*	.25*	.07	.14	.03	.35*	-.01
Social Science High School Teacher .....	-.22*	-.08	-.30*	.27*	-.20	.18	.07	.30*	.07
City School Superintendent .....	.11	-.07	.10	.15	.11	.20	-.02	.42*	.07
Minister .....	-.08	-.23*	-.05	-.65	.15	.17	.08	.20	-.19
Musician .....	-.08	-.30*	.02	-.36*	.40*	.07	.51*	.06	-.19

TABLE V

CORRELATIONS BETWEEN KUDER PREFERENCE RECORD SCALES AND STRONG VOCATIONAL INTEREST BLANK KEYS WHICH COMPRISE THE BUSINESS DETAIL AREA

(N = 166 Men)

Strong Vocational Interest Blank Keys	Kuder Preference Record Scales								
	Mechanical	Computational	Scientific	Persuasive	Artistic	Literary	Musical	Social Service	Clerical
Certified Public Accountant .....	-.40*	.45*	-.13	.12	-.13	.35*	.25*	-.06	.36*
Accountant .....	-.09	.49*	.11	.26*	-.32*	.10	.07	-.14	.55*
Office Manager .....	.13	.25*	.18	.25*	.25*	.05	.06	-.02	.38*
Purchasing Agent .....	.19	.41*	.16	.16	-.27*	-.19	-.17	-.16	.45*
Banker .....	-.30*	.38*	-.40*	.40*	-.37*	.03	.06	.10	.62*

TABLE VI

CORRELATIONS BETWEEN KUDER PREFERENCE RECORD SCALES AND STRONG VOCATIONAL INTEREST BLANK KEYS WHICH COMPRISE THE BUSINESS CONTACT AREA

(N = 166 Men)

Strong Vocational Interest Blank Keys	Kuder Preference Record Scales								
	Mechanical	Computational	Scientific	Persuasive	Artistic	Literary	Musical	Social Service	Clerical
Sales Manager .....	-.21*	.02	-.38*	.72*	-.30*	.17	-.02	.14	.21*
Newspaper Salesman .....	-.25*	-.07	-.62*	.64*	-.13	.09	.07	.14	.28*
Life Insurance Salesman .....	-.50*	-.13	-.63*	.58*	-.18	.23*	.11	.25*	.15

TABLE VII

CORRELATIONS BETWEEN KUDER PREFERENCE RECORD SCALES AND STRONG VOCATIONAL INTEREST BLANK KEYS WHICH COMPRISE THE LINGUISTIC OCCUPATIONAL AREA

(N = 166 Men)

Strong Vocational Interest Blank Keys	Kuder Preference Record Scales								
	Mechanical	Computational	Scientific	Persuasive	Artistic	Literary	Musical	Social Service	Clerical
Advertising Man .....	-.52*	-.31*	-.44*	.25*	.15	.51*	.35*	.68	-.02
Lawyer .....	-.45*	-.10	-.25*	.13	-.01	.56*	.15	.03	-.03
Author-Journalist .....	-.22*	-.10	-.56*	.12	.16	.23*	.19	.04	-.02
President, Manufacturing Concern .....	.06	.24*	-.09	.27*	-.05	.02	-.05	-.01	.25*



APPENDIX B

VALIDITY CHARACTERISTICS OF MEN'S SVIB SCALES.  
FROM THE STRONG VOCATIONAL INTEREST BLANK  
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TABLE 9  
 VALIDITY CHARACTERISTICS OF MEN'S SVIB SCALES  
 (Scores for criterion groups are raw scores; scores for men-in-general group are standard scores.)

Occupational and Nonoccupational Series	Criterion Group			Men-in-General		Per Cent Overlap	Number of Items Scored	Min. Per Cent Difference Scored
	N	Mean	S.D.	Mean	S.D.			
DENTIST	235	24.8	13.6	31.5	11.3	38	72	15
OSTEOPATH	584	13.8	8.4	27.9	11.0	29	46	14
VETERINARIAN	310	28.0	13.9	26.9	11.0	29	74	17
PHYSICIAN	532	16.7	8.5	26.5	13.2	31	46	14
PSYCHIATRIST	401	23.5	9.8	21.0	12.5	20	52	17
PSYCHOLOGIST	1045	26.7	13.0	22.2	12.4	21	70	17
BIOLOGIST	342	30.4	12.7	23.6	13.4	26	64	17
ARCHITECT	238	40.1	18.7	29.7	12.2	36	96	17
MATHEMATICIAN	181	46.4	19.7	23.2	12.5	24	97	20
PHYSICIST	167	47.9	18.8	20.7	14.4	23	93	21
CHEMIST	292	26.2	11.1	26.0	15.4	36	59	16
ENGINEER	511	31.0	14.5	31.9	14.2	45	75	17
PRODUCTION MANAGER	212	13.3	9.6	35.9	11.2	51	44	14
ARMY OFFICER	463	29.2	10.9	20.4	12.7	19	65	17
AIR FORCE OFFICER	198	37.8	17.6	24.3	10.9	22	89	17
CARPENTER	179	36.2	15.4	24.5	13.3	27	90	17
FOREST SERVICE MAN	406	29.2	9.5	23.4	14.4	26	64	16
FARMER	240	23.8	15.2	36.1	10.7	50	65	15
MATH-SCIENCE TEACHER	288	16.9	10.1	27.6	12.0	31	53	15
PRINTER	269	18.3	11.7	31.6	10.1	36	60	15
POLICEMAN	251	26.8	12.0	23.8	10.6	20	71	17
PERSONNEL DIRECTOR	147	15.4	8.2	29.3	13.1	37	44	14
PUBLIC ADMINISTRATOR	534	13.7	8.2	33.6	12.0	45	35	14
REHABILITATION COUNSELOR	272	21.6	12.8	25.0	10.1	21	51	17
YMCA SECRETARY	184	32.6	14.9	16.6	13.1	15	91	17
SOCIAL SCIENCE TEACHER	400	29.0	13.1	21.1	13.4	22	68	17
SCHOOL SUPERINTENDENT	217	20.7	11.8	28.7	12.4	34	55	16
MINISTER	189	24.0	10.7	25.1	12.9	28	62	15
LIBRARIAN	249	35.3	12.2	16.3	15.5	19	74	17
ARTIST	425	30.2	15.2	25.0	11.6	25	75	17
MUSICIAN PERFORMER	218	41.9	25.1	27.7	10.2	27	95	22
MUSIC TEACHER	441	11.8	11.1	28.6	10.2	29	54	17
CPA OWNER	490	20.2	10.9	22.6	11.6	20	57	17
SENIOR CPA	353	18.1	9.4	29.6	11.3	34	51	15
ACCOUNTANT	611	19.9	8.0	26.5	13.4	32	51	14
OFFICE WORKER	343	14.0	7.7	30.8	13.5	42	42	14
PURCHASING AGENT	316	14.5	10.0	33.2	12.6	46	53	15
BANKER	217	15.8	12.5	36.0	11.6	52	59	15
PHARMACIST	238	22.0	13.3	32.2	10.6	39	67	17
MORTICIAN	292	14.7	11.2	29.7	10.0	31	61	14
SALES MANAGER	354	18.3	14.8	32.9	10.2	40	68	16
REAL ESTATE SALESMAN	228	18.2	12.1	32.5	12.4	43	56	16
LIFE INSURANCE SALESMAN	241	15.9	16.3	37.1	10.2	52	56	17
ADVERTISING MAN	310	22.0	15.7	31.6	12.1	41	68	17
LAWYER	167	24.2	18.4	32.2	11.3	40	79	17
AUTHOR-JOURNALIST	249	24.2	15.6	34.3	10.4	44	63	17
PRESIDENT, MFG. CONCERN	242	36.2	30.0	31.8	9.9	36	98	21
CREDIT MANAGER	165	15.6	9.4	34.5	12.1	48	47	15
CHAMBER OF COMMERCE EXEC.	452	27.1	14.9	28.7	13.1	36	69	17
PHYSICAL THERAPIST	399	29.6	20.2	29.0	11.0	32	86	17
COMPUTER PROGRAMMER	348	21.7	11.2	24.6	12.4	25	52	16
BUSINESS EDUCATION TEACHER	503	24.0	8.1	24.2	13.0	32	66	15
COMMUNITY RECREATION ADMIN.	322	18.7	13.4	27.6	11.7	30	57	17
SPECIALIZATION LEVEL	350	40.1	15.6	18.4	13.4	18	93	17
OCCUPATIONAL LEVEL				36.9	10.6		33	10
MASCULINITY-FEMININITY				59.6	8.6		70	15
ACADEMIC ACHIEVEMENT				47.4	9.6		99	16
OCC. INTROVERSION-EXTROVERSION				44.5	11.0		55	14
				48.8	11.8		81	20

APPENDIX C

PREDICTIVE VALIDITY OF SVIB SCALES OVER 18 YEARS.  
FROM THE STRONG VOCATIONAL INTEREST BLANK  
MANUAL, PAGE 44

PREDICTIVE VALIDITY OF LVIS SCALES OVER 18 YEARS  
(1938 Scales; N = 663 Students)

Scores on Any Scale	Letter Ratings	Chances in 100 of Employment in That Occupation*
55 to 70	A+	88
45 to 54	A-	74
40 to 44	B+	62
35 to 39	B	49
30 to 34	B-	36
Below 30	C	17

\* Assumes all occupations are equally represented in population.

#### APPENDIX D

MEAN SCORES OF SIX OCCUPATIONAL GROUPS ON THEIR "OWN"  
SCALE AND ON THEIR FIVE OTHER HIGHEST SCORE SCALES  
ON HIGH SCHOOL SENIOR AND ADULT SVIB's. FROM  
THE STRONG VOCATIONAL INTEREST BLANK  
MANUAL, PAGE 45

MEAN SCORES OF SIX OCCUPATIONAL GROUPS ON THEIR "OWN"  
SCALE AND ON THEIR FIVE OTHER HIGHEST-SCORE SCALES, ON  
HIGH SCHOOL SENIOR AND ADULT SVIDS

Test (High School Senior) Occupational Scale	Mean Score	Retest (Adult) Occupational Scale	Mean Score
<b>Accountants (N = 24)</b>			
ACCOUNTANT	36	ACCOUNTANT	38
OFFICE MAN	44	SENIOR CPA	47
REAL ESTATE SALESMAN	41	CPA	42
SENIOR CPA	40	OFFICE MAN	39
PURCHASING AGENT	39	PUBLIC ADMINISTRATOR	38
PRINTER	37	REAL ESTATE SALESMAN	37
<b>Dentists (N = 30)</b>			
DENTIST	39	DENTIST	42
FARMER	42	PHYSICIAN	47
MATH-SCIENCE TEACHER	40	OSTEOPATH	45
PHARMACIST	40	FARMER	37
PRINTER	38	CHEMIST	37
VETERINARIAN	38	BIOLOGIST	36
<b>Doctors (N = 27)</b>			
PHYSICIAN	43	PHYSICIAN	54
OSTEOPATH	39	BIOLOGIST	44
MATH-SCIENCE TEACHER	38	PSYCHIATRIST	43
PHARMACIST	37	OSTEOPATH	42
DENTIST	37	CHEMIST	40
FARMER	36	PSYCHOLOGIST	39
<b>Journalists (and Advertising) (N = 21)</b>			
AUTHOR-JOURNALIST	32	AUTHOR-JOURNALIST	36
REAL ESTATE SALESMAN	39	ADVERTISING MAN	43
PAINTER	38	SOCIAL WORKER	42
ADVERTISING MAN	37	RELIABL. COUNSELOR	40
SALES MANAGER	36	REAL ESTATE SALESMAN	39
MUSICIAN	36	MUSIC TEACHER	39
<b>Lawyers (N = 32)</b>			
LAWYER	36	LAWYER	43
REAL ESTATE SALESMAN	43	PUBLIC ADMINISTRATOR	42
SALES MANAGER	42	PERSONNEL DIRECTOR	39
OFFICE MAN	39	REAL ESTATE SALESMAN	39
LIFE INS. SALESMAN	39	RELIABL. COUNSELOR	39
SOCIAL SCIENCE TEACHER	38	SOCIAL WORKER	39
<b>Mechanical Engineers (N = 38)</b>			
ENGINEER	39	ENGINEER	38
MATH-SCIENCE TEACHER	44	AIR FORCE OFFICER	47
AIR FORCE OFFICER	43	ARMY OFFICER	42
FARMER	43	PRODUCTION MANAGER	40
PRINTER	40	CHEMIST	40
CHEMIST	40	MATH-SCIENCE TEACHER	37



APPENDIX E

TEST-RETEST MEANS, STANDARD DEVIATIONS, AND CORRELATIONS  
FOR SEVERAL GROUPS OVER SEVERAL TIME INTERVALS.  
FROM THE STRONG VOCATIONAL INTEREST BLANK  
MANUAL, PAGES 27-33

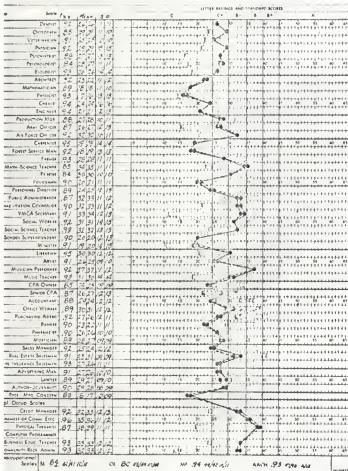


FIG. 13

Test-retest means, standard deviations, and correlations over 2 weeks, for 139 University of Minnesota sophomores

(Left-hand column entries and solid line are test data; right-hand column entries and broken line are retest data.)

(Median test-retest correlation .91.)

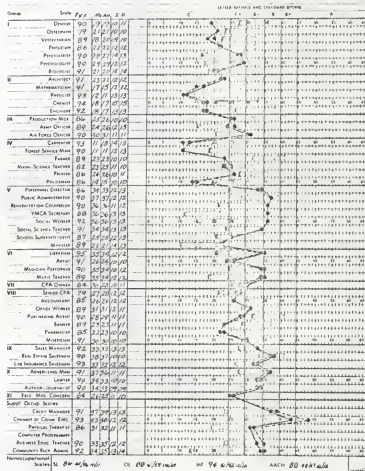


FIG. 14

Test-retest means, standard deviations, and correlations over 30 days, for 102 young adults

(Left-hand column entries and solid line are test data; right-hand column entries and broken line are retest data.)

(Median test-retest correlation .91.)

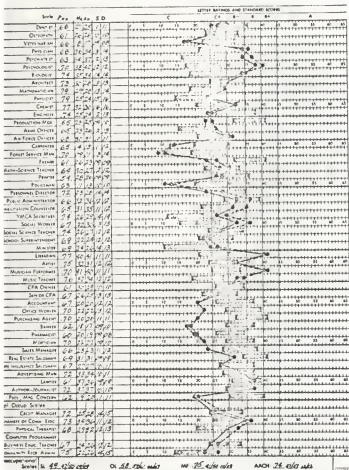


FIG. 15

Test-retest means, standard deviations, and correlations over 3 years, for 189 Harvard University freshmen

(Left-hand column entries and solid line are test data; right-hand column entries and broken line are retest data.)

(Median test-retest correlation .68.)

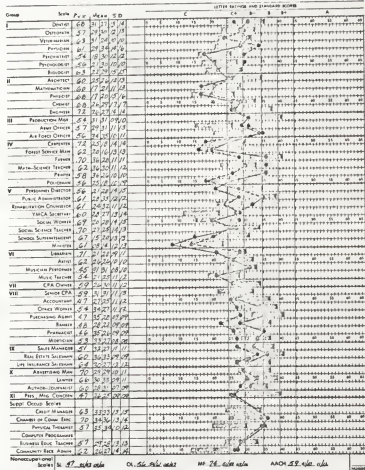


FIG. 16

Test-retest means, standard deviations, and correlations over 8 years, for 171 high school seniors

(Left-hand column entries and solid line are test data; right-hand column entries and broken line are retest data.)

(Median test-retest correlation .61.)

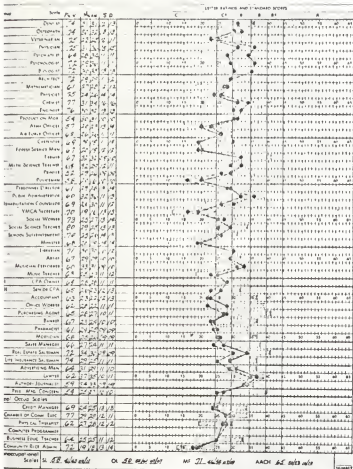


FIG. 17

Test-retest means, standard deviations, and correlations over  
22 years, for 191 Stanford University seniors

(Left-hand column entries and solid line are test data; right-hand column entries and broken line are retest data.)

(Median test-retest correlation .67.)

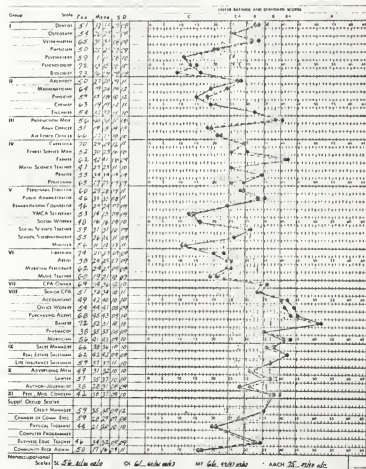


FIG. 18

*Test-retest means, standard deviations, and correlations over 30 years, for 48 Minnesota bankers*

(Left-hand column entries and solid line are test data; right-hand column entries and broken line are retest data.)

(Median test-retest correlation .56.)

APPENDIX F

COMPARISON OF ERRORS OF CLASSIFICATION, CORRECT CLASSIFICATIONS, AND TIES FOR SIX OCCUPATIONAL GROUPS, OBTAINED FROM TWO SCORING SYSTEMS. FROM THE KUDER OCCUPATIONAL INTEREST SURVEY, FORM DD, MANUAL, PAGES 28-29

COMPARISON OF ERRORS OF CLASSIFICATION, CORRECT CLASSIFICATIONS, AND TIES  
FOR 6 OCCUPATIONAL GROUPS, OBTAINED FROM 2 SCORING SYSTEMS

(N = 90 in each of 6 cross-validation groups)

OCCUPATIONAL GROUP	SYSTEM	ARCHITECT			AUTOMOBILE MECHANIC		
		Errors of Classification	Correct Classifications	Ties	Errors of Classification	Correct Classifications	Ties
Architect	General Reference Group	--	--	--	15	164	1
	OIS Scales	--	--	--	13	166	1
Automobile Mechanic	General Reference Group	15	164	1	--	--	--
	OIS Scales	13	166	1	--	--	--
Forester	General Reference Group	24	152	4	19	159	2
	OIS Scales	25	153	2	12	162	6
Journalist	General Reference Group	14	164	2	3	177	0
	OIS Scales	8	172	0	2	178	0
Pediatrician	General Reference Group	13	162	5	11	168	1
	OIS Scales	10	170	0	6	173	1
Psychology Professor	General Reference Group	11	164	5	3	177	0
	OIS Scales	7	171	2	4	176	0

Note: The column entries represent, respectively, the number of errors of classification, correct classifications, and ties found when the 90 members of each of two occupations being compared were classified into

one of the two occupations, first on scales developed with the use of a general reference group, and then on the basis of OIS scales.



FORESTER			JOURNALIST			PEDIATRICIAN			PSYCHOLOGY PROFESSOR		
Errors of Classification	Correct Classifications	Ties	Errors of Classification	Correct Classifications	Ties	Errors of Classification	Correct Classifications	Ties	Errors of Classification	Correct Classifications	Ties
24	152	4	14	164	2	13	162	5	11	164	5
25	153	2	8	172	0	10	170	0	7	171	2
19	159	2	3	177	0	11	168	1	3	177	0
12	162	6	2	178	0	6	173	1	4	176	0
---	---	---	10	169	1	18	162	0	14	165	1
---	---	---	5	174	1	15	162	3	17	163	0
10	169	1	---	---	---	12	166	2	14	163	3
5	174	1	---	---	---	3	175	2	8	168	4
18	162	0	12	166	2	---	---	---	28	145	7
15	162	3	3	175	2	---	---	---	7	170	3
14	165	1	14	163	3	28	145	7	---	---	---
17	163	0	8	168	4	7	170	3	---	---	---

APPENDIX G

DISTRIBUTION OF HIGHEST SCORE ON 30 OIS CORE SCALES.  
FROM THE KUDER OCCUPATIONAL INTEREST SURVEY,  
FORM DD, MANUAL, PAGES 30-31

DISTRIBUTION OF HIGHEST SCORE ON 30 OIS CORE SCALES  
(N=3000: 100 in each group)

79

GROUP	SCALE* ON WHICH HIGHEST SCORE WAS OBTAINED														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Banker (M)	Personnel Manager (M)	Psychologist, Clinical (M)	Physician (M)	Chemist (M)	Engineer, Electrical (M)	Engineer, Heating/Air Cond (M)	Carpenter (M)	School Superintendent (M)	Minister (M)	Printer (M)	Architect (M)	Farmer (M)	Accountant (M)	Policeman (M)
1. Banker (M)	57	3	0	1	1	8	6	6	1	0	0	2	1	4	0
2. Personnel Manager (M)	4	47	0	1	3	5	4	0	2	3	2	4	1	4	1
3. Psychologist, Clinical (M)	0	8	61	3	2	2	0	0	1	1	0	1	0	0	0
4. Physician (M)	0	4	1	48	4	2	1	1	2	2	0	4	0	0	2
5. Chemist (M)	1	1	2	3	39	22	3	0	1	1	0	3	3	1	0
6. Engineer, Electrical (M)	3	7	2	0	10	20	13	2	5	2	0	2	1	4	1
7. Engineer, Heating/Air Cond (M)	4	3	2	0	1	14	60	2	0	0	0	3	2	2	1
8. Carpenter (M)	2	2	0	2	0	6	2	64	0	0	1	4	1	0	7
9. School Superintendent (M)	3	13	0	1	4	7	1	3	46	6	1	2	2	3	1
10. Minister (M)	0	4	1	0	1	1	0	2	5	56	1	2	1	0	1
11. Printer (M)	3	3	0	1	0	3	2	3	0	0	62	5	0	1	2
12. Architect (M)	1	1	0	0	2	5	4	1	0	2	2	68	2	0	1
13. Farmer (M)	4	1	0	2	0	0	2	9	4	1	0	1	64	4	1
14. Accountant (M)	7	2	1	0	0	5	1	2	0	0	0	2	0	63	1
15. Policeman (M)	2	0	0	0	1	2	0	10	1	0	0	1	2	3	68
16. Lawyer (M)	1	2	6	0	2	5	2	1	1	4	1	5	1	4	0
17. Dept Store Saleswoman (F)	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1
18. Nurse (F)	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
19. Librarian (F)	0	0	3	1	0	0	0	0	0	3	0	1	0	0	0
20. Primary School Teacher (F)	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0
21. Secretary (F)	2	1	0	0	0	0	0	0	1	0	0	3	0	1	0
22. Mathematician (M)	3	0	5	0	7	8	0	1	1	2	0	1	0	5	0
23. Social Caseworker (M)	0	4	10	1	1	0	0	0	1	3	1	3	0	1	0
24. Elec Engineering Major (M)	0	0	1	0	3	5	4	1	0	0	1	0	0	3	0
25. Physical Sciences Major (M)	0	0	2	2	2	2	0	2	0	1	0	0	0	1	0
26. Biological Sciences Major (M)	0	0	2	4	0	0	1	1	0	0	0	2	0	0	1
27. Business & Marketing Major (M)	8	1	1	1	0	2	6	1	0	1	0	1	0	23	0
28. Premed, Pharm & Dent Major (M)	1	1	3	8	0	2	0	0	0	1	1	0	0	2	1
29. Home Ec Education Major (F)	0	0	0	1	0	0	0	0	1	1	1	1	0	1	0
30. Art & Art Education Major (F)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

\*M = Scales derived from male groups.  
F = Scales derived from female groups.

Scale* on Which Highest Score Was Obtained															Number of Ties	GROUP
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Lawyer (M)	Dept Store Saleswoman (F)	Nurse (F)	Librarian (F)	Primary School Teacher (F)	Secretary (F)	Mathematician (M)	Social Caseworker (M)	Elec Engineering Major (M)	Physical Sciences Major (M)	Biological Sciences Major (M)	Business & Marketing Major (M)	Premed, Pharm & Dent Major (M)	Home Ec Education Major (F)	Art & Art Education Major (F)		
2	0	0	0	1	2	1	0	0	0	1	2	1	0	1	1	1. Banker (M)
6	0	0	0	0	1	0	9	2	0	0	1	1	0	0	1	2. Personnel Manager (M)
2	0	0	1	1	1	2	5	1	1	1	1	3	3	0	1	3. Psychologist, Clinical (M)
2	0	4	1	3	1	6	0	1	1	3	2	7	0	0	2	4. Physician (M)
1	0	0	0	0	1	9	0	3	6	1	0	1	0	0	2	5. Chemist (M)
2	0	0	2	0	0	8	1	13	2	0	0	0	0	0	0	6. Engineer, Electrical (M)
2	0	0	0	0	0	0	0	2	0	0	4	0	0	0	2	7. Engineer, Heating/Air Cond (M)
0	2	1	0	1	0	0	1	1	0	0	1	1	1	0	0	8. Carpenter (M)
7	0	0	0	0	0	1	2	1	0	0	0	0	0	0	4	9. School Superintendent (M)
3	0	0	0	0	3	5	8	2	1	1	0	0	0	2	0	10. Minister (M)
4	1	0	1	1	0	2	1	2	0	1	3	0	0	0	1	11. Printer (M)
2	0	0	1	0	0	4	0	2	1	0	0	0	2	2	3	12. Architect (M)
2	0	0	0	0	0	0	1	0	2	0	1	0	0	1	0	13. Farmer (M)
5	0	0	0	0	0	4	0	2	1	1	2	0	0	1	0	14. Accountant (M)
0	0	0	0	0	0	0	3	1	2	0	3	1	1	0	1	15. Policeman (M)
61	0	0	0	0	0	2	0	0	0	1	1	0	0	0	0	16. Lawyer (M)
1	65	5	1	3	14	0	0	0	0	0	0	1	6	1	0	17. Dept Store Saleswoman (F)
0	4	76	2	1	2	0	0	0	0	0	1	1	10	2	1	18. Nurse (F)
1	2	2	52	17	7	3	1	0	0	0	0	0	5	3	1	19. Librarian (F)
1	3	3	7	61	6	1	0	0	0	1	0	0	14	0	0	20. Primary School Teacher (F)
0	4	5	4	2	65	0	0	0	0	0	0	1	12	2	1	21. Secretary (F)
2	0	0	1	0	2	55	2	1	2	2	0	3	0	0	1	22. Mathematician (M)
3	0	3	4	0	3	2	4	2	1	1	1	0	2	1	1	23. Social Caseworker (M)
0	0	0	0	0	0	3	0	55	12	0	3	6	0	0	0	24. Elec Engineering Major (M)
0	0	0	0	0	0	11	0	14	40	11	3	5	0	1	3	25. Physical Sciences Major (M)
0	0	1	0	0	0	2	0	6	13	41	2	23	0	1	0	26. Biological Sciences Major (M)
2	1	0	0	0	2	0	0	10	0	2	34	2	2	0	1	27. Business & Marketing Major (M)
0	0	0	0	0	2	0	0	4	9	14	1	51	0	1	2	28. Premed, Pharm & Dent Major (M)
0	1	4	0	6	5	1	1	0	0	3	1	0	65	8	0	29. Home Ec Education Major (F)
0	0	0	0	3	0	0	0	0	0	0	0	0	4	92	0	30. Art & Art Education Major (F)

NOTE: The diagonal indicates the number of cases in which an individual obtained his highest score on the scale for his own group. Ties are

included in these entries and are also listed separately in the column at the extreme right.

#### APPENDIX H

PERCENTAGE OF OVERLAP FOR PAIRS OF GROUPS, EACH GROUP  
SCORED ON 30 OIS CORE SCALES. FROM THE KUDER  
OCCUPATIONAL INTEREST SURVEY, FORM DD,  
MANUAL, PAGES 32-33

SCALE*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Banker (M)															
Personnel Manager (M)															
Psychologist, Clinical (M)															
Physician (M)															
Chemist (M)															
Engineer, Electrical (M)															
Engineer, Heating/Air Cond (M)															
Carpenter (M)															
School Superintendent (M)															
Minister (M)															
Printer (M)															
Architect (M)															
Farmer (M)															
Accountant (M)															
Policeman (M)															
Banker (M)	1	10	4	4	8	14	13	11	8	4	7	8	8	15	4
Personnel Manager (M)	10		10	6	9	20	12	5	16	11	8	7	9	8	7
Psychologist, Clinical (M)	4	10		12	9	12	5	3	9	9	5	3	5	4	4
Physician (M)	4	6	12		13	9	5	7	11	9	6	8	6	6	4
Chemist (M)	8	9	9	13		29	9	5	9	6	4	7	8	7	3
Engineer, Electrical (M)	14	20	12	9	29		24	9	17	12	5	18	8	17	5
Engineer, Heating/Air Cond (M)	13	12	5	5	9	24		9	7	4	7	8	10	12	5
Carpenter (M)	11	5	3	7	5	9	9		6	8	5	9	9	6	15
School Superintendent (M)	8	16	9	11	9	17	7	6		11	10	6	9	5	4
Minister (M)	4	11	9	9	6	12	4	8	11		8	6	5	3	3
Printer (M)	7	8	5	6	4	5	7	5	10	8		12	2	7	3
Architect (M)	8	7	3	8	7	18	8	9	6	6	12		6	7	4
Farmer (M)	8	9	5	6	8	8	10	9	9	5	2	6		8	5
Accountant (M)	15	8	4	6	7	17	12	6	5	3	7	7	8		6
Policeman (M)	4	7	4	4	3	5	5	15	4	3	3	4	5	6	
Lawyer (M)	9	12	10	9	9	16	6	4	12	10	9	9	8	7	6
Dept Store Saleswoman (F)	2	2	3	4	2	2	2	5	2	5	4	4	1	1	3
Nurse (F)	2	1	4	4	1	3	1	4	1	1	2	2	0	1	2
Librarian (F)	3	3	6	3	4	3	1	1	2	8	2	3	1	1	0
Primary School Teacher (F)	1	3	4	4	1	3	1	2	1	4	1	2	1	2	2
Secretary (F)	5	5	6	4	3	3	1	2	3	3	2	4	1	3	1
Mathematician (M)	8	8	14	10	22	19	6	4	8	11	4	8	4	12	2
Social Caseworker (M)	5	14	21	8	6	10	5	4	10	11	7	6	5	5	3
Electrical Engineering Major (M)	5	7	8	4	10	17	8	7	5	5	4	5	3	9	4
Physical Sciences Major (M)	5	3	6	6	10	14	3	5	6	4	5	3	6	4	7
Biological Sciences Major (M)	3	3	8	13	7	8	2	5	6	3	3	3	8	5	4
Business & Marketing Major (M)	14	10	5	7	9	17	15	7	10	5	11	8	12	22	10
Premed, Pharm & Dent Major (M)	4	4	9	16	7	9	4	4	7	6	4	2	7	6	7
Home Ec Education Major (F)	2	2	7	3	2	4	1	3	2	4	2	4	1	3	1
Art & Art Education Major (F)	2	1	3	2	0	2	1	0	2	4	3	2	1	2	1

\*M = Scales derived from male groups.  
F = Scales derived from female groups.



16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Lawyer (M)	Dept Store Sales woman (F)	Nurse (F)	Librarian (F)	Primary School Teacher (F)	Secretary (F)	Mathematician (M)	Social Caseworker (M)	Elec Engineering Major (M)	Physical Sciences Major (M)	Biological Sciences Major (M)	Business & Marketing Major (M)	Premcd, Pharm & Dent Major (M)	Home Ec Education Major (F)	Art & Art Education Major (F)	SCALE*
9	2	2	3	1	5	8	5	5	5	3	14	4	2	2	1. Banker (M)
12	2	1	3	3	5	8	14	7	3	3	10	4	2	1	2. Personnel Manager (M)
10	3	4	6	4	6	14	21	8	6	5	9	7	3		3. Psychologist, Clinical (M)
9	4	4	3	4	4	10	8	4	6	13	7	16	3	2	4. Physician (M)
9	2	1	4	1	3	22	6	10	10	7	9	7	2	0	5. Chemist (M)
16	2	3	3	3	3	19	10	17	14	8	17	9	4	2	6. Engineer, Electrical (M)
6	2	1	1	1	1	6	5	8	3	2	15	4	1	1	7. Engineer, Heating/Air Cond (M)
4	5	4	1	2	2	4	4	7	5	5	7	4	3	0	8. Carpenter (M)
12	2	1	2	1	3	8	10	5	6	6	10	7	2	2	9. School Superintendent (M)
10	5	1	8	4	3	11	11	5	4	3	5	6	4	4	10. Minister (M)
9	4	2	2	1	2	4	7	4	5	3	11	4	2	3	11. Printer (M)
9	4	2	3	2	4	8	6	5	3	3	8	2	4	2	12. Architect (M)
8	1	0	1	1	1	4	5	3	6	8	12	7	1	1	13. Farmer (M)
7	1	1	1	2	3	12	5	9	4	5	22	6	3	2	14. Accountant (M)
6	3	2	0	2	1	2	3	4	7	4	10	7	1	1	15. Policeman (M)
3	3	1	4	2	3	13	9	3	3	3	9	3	1	2	16. Lawyer (M)
1	11	6	6	7	1	4	1	2	3	3	3	4	10	4	17. Dept Store Saleswoman (F)
4	7	6	17	9	4	8	0	0	3	3	1	8	4		18. Nurse (F)
2	15	6	17	10	1	6	1	2	2	4	2	12	2		19. Librarian (F)
3	15	7	9	10		3	8	3	3	3	6	4	14	5	20. Primary School Teacher (F)
13	3	1	4	1	3		13	10	16	9	10	9	3	1	21. Secretary (F)
9	3	4	8	6	8	13		6	6	6	6	5	7	3	22. Mathematician (M)
3	1	0	1	3	10	6		23	10	17	11	2	2		23. Social Caseworker (M)
3	2	2	0	2	3	16	6	23		22	9	18	3	1	24. Elec Engineering Major (M)
3	3	3	3	2	3	9	6	10	22		10	29	4	3	25. Physical Sciences Major (M)
9	3	3	3	4	6	10	6	17	9	10		10	4	1	26. Biological Sciences Major (M)
3	4	3	1	2	4	9	5	11	18	29	10		5	1	27. Business & Marketing Major (M)
1	10	13	8	12	14	3	7	2	3	4	4	5		8	28. Premcd, Pharm & Dent Major (M)
2	4	3	4	2	5	1	3	2	1	3	1	1	8	—	29. Home Ec Education Major (F)
															30. Art & Art Education Major (F)

NOTE: Overlap is approximately twice the percentage of errors of classification that occurs if the cutting point is placed where the distribution of difference scores for the two scales involved intersect. For example, a percent overlap between Mathematician and School Superintendent means that approximately 4 percent of the members of each

group were incorrectly classified as members of the other group, on the basis of the higher of the two scores. It should be noted that this table is not related to Table 5; it is based on paired comparisons of scores rather than on distribution of highest score.

# APPENDIX I

RANK OF EACH CORE GROUP'S SCORES ON ITS OWN OIS SCALE.  
FROM THE KUDER OCCUPATIONAL INTEREST SURVEY,  
FORM DD, MANUAL, PAGE 35

RANK OF EACH CORE GROUP'S SCORES ON ITS OWN OIS SCALE\*  
(N=3000: 100 in each of 30 core groups)

85

Group <sup>b</sup>	NUMBER OF SCORES PER RANK						
	First	Second	Third	Fourth	Fifth	Sixth	Below Sixth
1. Banker (M)	57	9	8	8	3	5	10
2. Personnel Manager (M)	47	16	11	8	3	4	11
3. Psychologist, Clinical (M)	61	10	5	3	5	0	16
4. Physician (M)	48	16	10	6	4	3	13
5. Chemist (M)	39	23	11	10	10	4	3
6. Engineer, Electrical (M)	20	19	15	12	4	5	25
7. Engineer, Heating/Air Cond (M)	60	15	9	3	3	4	6
8. Carpenter (M)		9	5	4	1	4	13
9. School Superintendent (M)	46	20	7	5	6	3	13
10. Minister (M)	56	9	8	5	6	3	13
11. Printer (M)	62	15	4	2	1	4	12
12. Architect (M)	68	9	5	2	3	5	8
13. Farmer (M)	64	14	6	1	2	2	11
14. Accountant (M)	63	14	6	5	1	1	10
15. Policeman (M)	68	14	3	4	1	1	9
16. Lawyer (M)	61	13	8	4	1	4	9
17. Dept Store Saleswoman (F)	65	9	8	2	2	4	10
18. Nurse (F)	76	15	2	2	3	0	2
19. Librarian (F)	52	25	8	7	2	2	4
20. Primary School Teacher (F)	61	26	6	4	0	0	3
21. Secretary (F)	63	16	8	5	1	1	6
22. Mathematician (M)	53	15	9	4	2	3	14
23. Social Caseworker (M)	47	18	11	3	3	4	14
24. Elec Engineering Major (M)	58	15	14	3	5	0	5
25. Physical Sciences Major (M)	46	20	12	8	2	3	9
26. Biological Sciences Major (M)	41	28	8	6	6	3	8
27. Business & Marketing Major (M)	34	24	11	0	5	2	24
28. Premed, Pharm & Dent Major (M)	51	17	10	6	2	4	10
29. Home Ec Education Major (F)	65	17	3	3	3	5	4
30. Art & Art Education Major (F)	92	3	2	0	0	1	2

\*Each subject was scored on each of the 30 core scales.  
Where ties occurred, score on own scale was accorded the higher rank.

\*M = Male group.  
F = Female group.

## APPENDIX J

FREQUENCY OF DIFFERENCES, IN LAMBDA POINTS, BETWEEN  
HIGHEST SCORE AND SCORE ON OWN KEY. FROM THE  
KUDER OCCUPATIONAL INTEREST SURVEY,  
FORM DD, MANUAL, PAGE 36

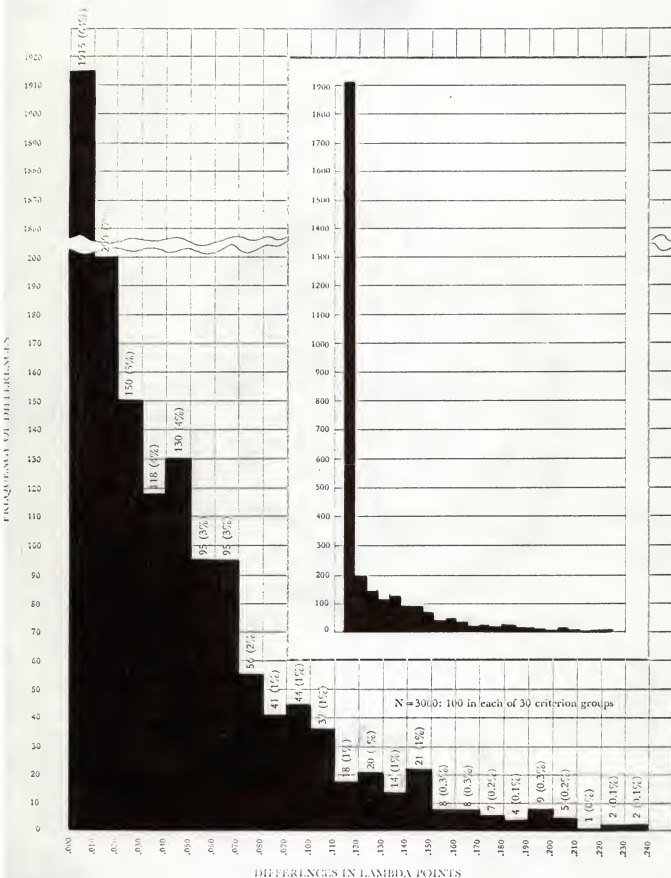


Fig. 8. Frequency of differences, in lambda points, between highest score and score on own key.  
All subjects were scored on all 30 keys.

**APPENDIX K**

**EXPLANATORY LETTER RETURNED WITH INTEREST PROFILES  
TO PARTICIPATING SUBJECTS**

C  
o  
p  
y

Dear

I would like to extend a sincere thank you for all your help and consideration in taking the interest inventories for my master's thesis. Out of 100 boys, all of them cooperated and took the tests.

Enclosed in this envelope, you will find your own results on the two tests, and an interpretative leaflet for the Kuder. Again, the Strong Vocational Interest Blank is the blue test and the Kuder Occupational Interest Survey is the orange test. On each of these tests you will receive scores for many different occupations. These scores indicate how your interests compare with successful men currently engaged in the occupations. All they show is how your interests compare. They do not tell you that you will succeed in an occupation. To determine success you will also have to consider how your abilities, aptitudes, past achievements, and motivation compare with those who succeed in the occupation. Even so these test scores show one of the many variables involved in choosing an occupation and by comparing your interests to men in the occupation you may more realistically decide what areas of work you would like most to enter.

On the Strong (blue), you will see a standard score immediately to the right of each occupation. This score shows the degree your interests are related to the interests of men in that occupation. Further to the right, is a number one which indicates the graphs' representation of the score. Also, along to the right is a blue shaded area which shows the average (middle 1/3) scores for a group of professional and business men. These men were drawn from a large number of varied occupations. The scores farthest to the right of the blue shaded area show the highest degree of interest, as compared to men currently engaged in that occupation while the scores farthest to the left show the lowest degree of interest as compared to men currently engaged in that occupation. On the back of the blue sheet are further instructions for interpreting your profile of interests.

On the Kuder (orange), you will see a number of two-decimal figures next to various occupations. These figures are positive correlation coefficients and the higher they are,



the more similar your interests are with men in those occupations while the lower they are, the least similar your interests are. Scores of .45 or better show a high interest in that area. It is very unusual to get any scores above .75. Also, included is an interpretative leaflet which tells you how to interpret your own profile and gives you additional information as to what your scores mean. If the V score in the bottom right-hand corner is below .45 or if none of your scores are above .31 then the test results are not reliable for you. This may be due to many factors such as torn paper, too many questions not answered, faking, or something else.

Try to view the entire set of interests. Consider what all the high interest occupations have in common. Also, look at the low interest occupations because a very low interest area may tell you just as much about yourself as a high one.

Again, thank you for all of your help. Without it, my thesis would not have been possible. I hope this information will be of help to you. If you have further questions, feel free to see me in Moore Hall, Room 910, or ask your high school counselor, or ask in the counseling center. Dr. Danskin, the Head of the Counseling Center, is considered one of the top men in the country at interpreting interest tests.

Sincerely,

Robert N. Wilson  
Diving Coach

RNW:cp  
Enc.

APPENDIX L

A BIBLIOGRAPHY LISTING OF ALL STUDIES COMPARING THE STRONG  
VOCATIONAL INTEREST BLANK WITH THE KUDER PREFERENCE  
RECORD - VOCATIONAL, AS LISTED IN BUROS' MENTAL  
MEASUREMENTS YEARBOOKS

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A COMPARISON OF SIMILAR SCALES ON THE STRONG VOCATIONAL  
INTEREST BLANK AND THE KUDER OCCUPATIONAL  
INTEREST SURVEY, FORM DD

by

ROBERT N. WILSON

B. A., Macalester College, 1966

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AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

College of Education

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

1967

The purpose of this study was to compare similar scales on the Strong Vocational Interest Blank and the Kuder Occupational Interest Survey, Form DD, to determine to what extent they actually measure the same factors.

The information resulting from the comparison would be useful to counselors in deciding which interest test to use in the counseling situation. The results would also point out inconsistencies and contradictions in the use of both interest tests with the same client.

The sample consisted of 100 male freshman students who were randomly selected from the 1,400 male freshmen attending Kansas State University Spring Semester, 1967.

The data were reported in the form of Pearson product moment correlation coefficients between the student's interest scores in each test for 76 different occupations. Each pair of occupations compared was related to each other in the nature of interests involved. Of the total 76 occupations compared, 27 were named the same on both tests. The degree of significance for each correlation coefficient was reported at both the .05 and .01 levels.

It was found that, in general, the two tests are measuring different factors. The mean correlation coefficient for all 76 scales compared was .262. The mean correlation coefficient for the 27 scales which were named the same was .317. By including the engineering scales and a few



others which seemed to be measuring the same factors, even though not named the same, the mean correlation coefficient was increased to .354. Only five correlation coefficients were found to be above .50, the highest being .672 between the Carpenter scales on the two tests. For predictive purposes, a correlation coefficient of .50 means that only 25 per cent of the variance of one variable is being accounted for by the other.

There are very few times that we would be interested in predicting a student's score on one interest test from his score on another interest test. Even so, a direct contradiction may exist in using these two tests in the counseling situation. After all, each test gives the student a score showing how similar his interests are to those of men in each of many occupations. Yet the low correlations between same-named scales show these two tests are not measuring the same factors.

Many questions need to be answered by and for the counselor before he can skillfully make use of both of these interest tests. Until these questions are answered more clearly and more directly, the writer can only recommend that a counselor who wishes to use both of these tests should study them very carefully, attempting to determine why their scales are measuring different factors and what factors each scale is measuring. A counselor who wishes to choose between

the two tests for a counseling situation would be well advised to stay with the Strong Vocational Interest Blank until the Kuder Occupational Interest Survey, Form DD, has more supporting research, especially predictive validity data and long-term reliability data.